

The Journal of the Institute of Transport

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Feb.-March 1948

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The Institute of Transport, 80 Portland Place, London W. 1.
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Feb.-Mar. 1948

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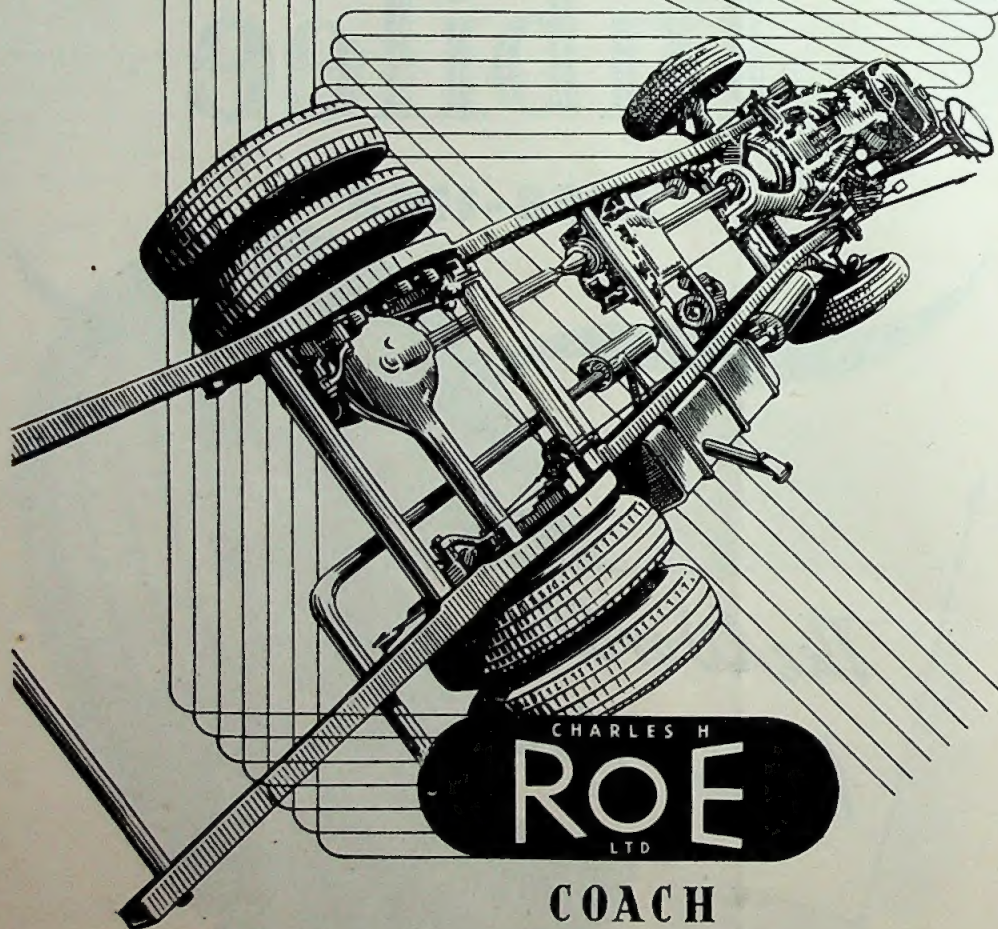
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The following should be added to the list published in the last issue :—

O.B.E. : H. G. Sorrell (*Associate Member*).

SECTION COMMITTEES

The following particulars of appointments and changes have been received :—

EAST MIDLANDS SECTION

Committee : J. A. Fielden (Hon. Secretary, Northampton Group), L. Goodridge (Hon. Secretary, Leicester Group). Resigned : H. P. Day.

SOUTH AFRICA CENTRE

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JOURNAL OF THE NEW SOUTH WALES CENTRE

Volume 7, No. 3 of the above Journal, for August 1947 has been received, and includes the following items :—

"Developments in railway civil engineering in England and America" by K. A. Fraser, O.B.E., M.Inst.T.

"All-relay interlockings" by W. F. Barton, Signal and Traffic Engineer, N.S.W. Railways.

"Review of arbitration since 1902" by the Hon. E. H. Farrar, M.L.C., President of the Legislative Council.

"Sea transport : the need for study" by G. A. Whitton, Vice-President of the Maritime Services Board of N.S.W.

LEICESTER GROUP

The Council has sanctioned the formation of a Leicester Group of the East Midlands Section. The Hon. Secretary is P. A. Goodridge, A.M.Inst.T., City Transport Offices, Humberstone Gate, Leicester.

CHANGE OF NAME OF GLOUCESTER GROUP

The Council has approved the change of the name of the Gloucester Group (Western Section) to Gloucester and Cheltenham Group.

HON. CORRESPONDING MEMBER, EASTERN AREA

The Council has accepted with great regret the resignation from the office of Hon. Corresponding Member, Eastern Area, of Mr. S. O. Chivers, C.B.E., A.M.Inst.T. Mr. L. A. Carey, A.M.Inst.T., Transport Manager of Reckitt and Colman, Ltd., at Norwich has accepted the Council's invitation to succeed him.

SIR WILLIAM CHAMBERLAIN MEMORIAL ADVISORY COMMITTEE

The Council of the Institute has appointed Mr. Harold Cooper, A.M.Inst.T. (Manchester Corporation Transport), as Hon. Secretary of the Sir William Chamberlain Memorial Advisory Committee in succession to Mr. H. A. Bennett, M.B.E., whose resignation it has accepted with much regret.

LOCAL GOVERNMENT EXAMINATIONS BOARD

Paragraph 28 of the Scheme of Conditions of Service approved by the National Joint Council for Local Authorities' Administrative, etc., Staffs, provides that a general division officer shall not be eligible for promotion to a higher grade unless he or she has passed the Promotion Examination or has secured such qualification as is recognised by the Local Government Examinations Board as an alternative. The Associate Membership examination of the Institute is included in the list of examinations recognised for promotion purposes.

JOURNAL BINDERS

A Binder blocked with the title "The Institute of Transport Journal", in which loose copies of the Journal are inserted very simply by means of a thin wire stiffener, is available. It holds 20 copies. The price is 9s. 6d., inclusive of postage and packing, and orders should be sent to the Institute.

APPOINTMENT VACANT

A well-known industrial undertaking wishes to appoint as Assistant to its Transport Director a young man who could be trained in the Company's methods with a view to qualifying ultimately for the appointment of Transport Manager. Some experience in the transport department of an industrial undertaking is desirable. Commencing salary would be £400-£500 according to experience, etc. Any members desirous of being considered should send their names, with a brief note of age, experience, and educational qualifications to the Secretary of the Institute.

LIVING WITH TRANSPORT

A Survey of Amenity Requirements in a Public Passenger Transport Service

By

CHRISTIAN BARMAN, F.R.I.B.A., F.S.I.A., M.Inst.T. and M. G. BENNETT, M.Sc., F.Inst.P.

Paper read in London on January 19th 1948. In the Chair, the President.

At this present moment, when the railways are struggling to avert a breakdown of vital communications, the choice of subject for this paper requires a word of explanation. Amenities are not essentials, and to-day it is the essentials that are at stake. In submitting the following remarks, the authors have taken courage from two reflections. The first is that a time like the present brings a useful opportunity for collecting and clarifying one's thoughts, so that when large-scale improvements again become possible the major requirements may be fully understood and agreed by all interested parties. Considerable attention has in fact been devoted to amenity matters during the last three or four years; there is much new information to be sifted and digested, and additional research is needed into questions that have been opened up. In the second place, there is a clear feeling in some managements that in the hard and troubled years through which this country has passed, the amenities of transport undertakings have run down to a level where they constitute a real deterrent to travel. It may be necessary for the Government to curtail the consumption of transport as it has already curtailed the consumption of other services, but there are better ways of curtailing demand than by making the service unattractive. That would be a bad way, and also a dangerous way. Pride and confidence were never more necessary than they are in the present situation, and the experience of the last ten years in Government, in industry and in health and education work has shown what a carefully planned amenities policy can do to build up these essential spiritual reserves.

When the civil and mechanical engineers exert themselves to reduce train vibration and roll, they are dealing with matters that fall clearly under the heading of amenities, but the amenities are those that appertain to the provision of transport in the strictest sense. These are the matters that were discussed by Sir Harold Hartley in the remarkable paper he read before this Institute under the title *Amenities in Passenger Transport* nearly twenty years ago. The present paper is concerned with a number of extras the planning of which raises very different problems. Some of these extras are necessary and inevitable because transport can no more be sold without them than a cup of tea can be sold without using a cup; others are additions demanded by the same public taste

that demands sugar in the tea and a spoon to stir it with. Of all the commodities that modern industry offers to the public, none is more dependent than transport on these added things for its ultimate success. Good whisky deserves a well-designed bottle, and good music will attract more people in a hall where the seating and the acoustics are also good; but the best transport in the world will leave the public unhappy and discontented if it is served up in an unpalatable form. The consumer who buys transport has to live with it while it lasts, and his judgments will be coloured by all that it does to him in the process.

Passenger transport exists to serve the passenger. But there are other people besides the passenger to be considered, and any complete picture of amenity values would have to include two other social groups that have to live with transport, each in their different ways. In addition to the consumers who use transport, there are the personnel who provide it, and the world at large, which suffers it. The personnel are important because they make transport what it is, and their attitude towards their work will be strongly influenced, for good or ill, by the environment in which they perform their duties. If the public are to get good transport, it is necessary that transport personnel should have tools of which they can feel proud and an environment which seems to them to give purpose and direction to their work and dignity to their calling. It is not possible within the limits of this paper to discuss amenities specifically provided for the benefit of the personnel, an important subject that would require a separate paper to do it justice. Reference will, however, be made to the impact of transport upon the world at large. The world at large needs transport, and is quick to complain of shortcomings, but at those times when it does not happen to be using transport services, it is liable to regard their paraphernalia as a nuisance. Transport then becomes a disturber of the peace and exists on sufferance. To lessen that natural impatience and try to replace it with something like friendliness and good feeling is the main purpose of the broader, long-range amenity values that a transport service cultivates in its relations with the world at large.

To get a clear and orderly view of the subjects involved it will be useful to arrange them under broad group headings. Four such headings

have been adopted here. The second group of subjects, Manner and Appearance, is one that enters into all the relations which a transport service is called upon to entertain, and is of special significance in its dealings with the world at large. The authors have concentrated on railway transport, a subject of which they have some direct experience. They are aware of having touched on many speculative and even disputable points and of referring to other matters that may seem almost too obvious to deserve a mention. They hope that the inclusion of both kinds will be justified by the advantage of seeing this particular group of functions as a broadly interlinked whole.

1. PEDESTRIAN MOVEMENT

A railway journey starts at the moment when a passenger steps from the street pavement across the threshold of the station. The first and last laps of that journey are made on foot. Since both laps take place under the auspices of a transport undertaking, and since a transport undertaking is assumed to understand the science of movement, the passenger will expect his journeys on foot to be as smooth and easy as his journey by rail.

Circulation is good when it is free, continuous, without hindrance or stoppages. Two things may stop a moving passenger: not knowing where to go; and bumping into other people. Good circulation then, and all the freedom, ease and comfort of body and mind that result from it, will have been achieved if every passenger knows where to go, and if he is able to go to that place without undue interference from other traffic trying to get to other places.

A passenger will know where to go if his path is easy and natural, and if he can see clearly where it leads. The first is a matter of planning; the second is a matter of guidance. In planning paths for passengers we learn from the movement of trains on a track and from the movement of gases through a duct. Trains do not like sharp curves; a sharp curve is liable to confuse them and make them take a wrong direction. When air in a duct meets a sharp corner it stops and eddies around anxiously before proceeding slowly on its way. Why were station walls, partitions, passages and staircases built at right angles to each other like the masonry structures of the ancient Greeks and Romans? It is the inside of the station rather than the outside of the locomotive that is in need of streamlining. St. Paul's Underground station in London, where the ticket hall is treated as a funnel-shaped extension of the escalator shaft mouth, is a small-scale illustration of what can be done by the study of crowd dynamics in architectural planning.

The principal difference between the pas-

senger's path and the path of the air in a duct is found when we come to the branches. The air that meets two or more branches flows into all the branches at once. The passenger has to pick out his particular branch from the rest. This he is enabled to do by the scientific planning of signposting. The best signposting is that which is so visible, so clear and so easily understood that the passenger never needs to pause on his way. The highest form of signposting should be able to do its work without depending on the use of words. There has been one approach to such signposting in the United States, where coloured lines run along on the ceiling, and on the London Underground, where colour lights are used. Colour is helpful even as a mere reinforcement of a word-using sign, as, for example, in the daylight blue "Way Out" signs of certain Underground stations where ordinary incandescent lighting is used for all other signs. A still more advanced method for using colour is to apply it not only to signs but to parts of buildings. At some experimental stations, unidirectional passages allocated to contrary movements are lined in dark materials as well as posted with a "No Entry" sign. The possibilities of this method are full of interest; only the fringe of them has been touched as yet.

The second great obstacle to good circulation is interruption by other traffic. Two kinds of interruption may be distinguished. The first is the slowing down of movement that is caused by congestion. The second is the crossing of one flow of traffic by another. The first poses a quantitative problem in planning, whose solution depends on accurate measurements of space and time. The second poses a problem of arrangement and lay-out which is solved by an objective analysis of the whole relevant system of movements. One is the result of errors in size, the other of errors in design. Both kinds of error are equally to be avoided if a good standard of amenity in pedestrian movement is to be attained.

During recent years important advances have been made in the scientific appraisal of dimensional requirements in stations. A typical example is a recent statistical investigation bearing upon the design of platforms. The investigation covered the speed of movement of passengers in and out of trains, up and down arrival and departure platforms, and past ticket barriers. The characteristics of different trains were plotted in such a way as to show the frequency with which various loadings are liable to occur, and on this basis studies were made of passenger movement and passenger concentration for various types of platform. Thus, as far as arrival platforms are concerned, the figures enable instructive comparisons to be made between end and centre exits, between platforms

with and without train concourses, and between platforms having different numbers of ticket collectors and exit stairs of different widths. Similar methods were applied to other parts of stations. The modern architect and engineer are as interested in accurate timing as the operating departments have been since railways first began. But their interest in timing is more concerned with the "piling-up" effect of delays than with the delays themselves. They know that a minute lost in a jostling crowd may be more unpleasant than five minutes lost in a comfortable train.

The crossing of a stream of passengers by another traffic flow may occur when two passenger paths intersect, when arriving and departing passengers are allowed to mix, and when passengers in the pursuit of tickets, train indicators, tobacco and other necessities have to turn and retrace their steps. It also occurs when passenger streams collide with trucks bearing parcels, luggage, or mail bags. The movements of pedestrians and trucks have become immensely complicated since the majority of stations were built, and, generally speaking, the obsolescence of a station may be most accurately estimated by the frequency of this kind of interruption. The difficulty is fundamental and there is no easy cure; it may be possible here and there to provide enough additional space to ease a bottleneck; the proper clearing of passenger paths usually involves a major operation. We used to think in terms of bridges and subways. The modern designer is inclined to take a broader view; instead of planning in two dimensions with occasional excursions into the third he treats the entire station as a three-dimensional system. Two-level stations like Cardiff and Leicester have shown how circulation may benefit from such methods; the use of three levels has been found well worth while at such different places as Charing Cross Underground and Montreal.

II. MANNER AND APPEARANCE

A. Civility

Transport personnel have earned a reputation for good manners which has stood up well under the strain of the last eight years. It is part of the business of those responsible for general amenities to see that the same high standard of civility is reflected in the whole of the physical environment of transport, for this environment is just as much an extension of immediate personal relationships as the telephone and radio are extensions of direct human speech.

The first and immediate extension of the human individual is the uniform. Uniform has nothing to do with protective clothing used for dirty work or to reduce wear and tear of personal clothing; the line of demarcation at the moment

is not always as sharply drawn as it should be. Uniform proper may be used as an expression of pride in service that is common to all ranks, or it may be used as a badge either of high rank or of low rank. It is used for the first purpose by the armed forces and the Church. It is used as a badge of high rank by the legal profession from the Lord Chancellor downwards. The railways so far have elected to use it to denote low rank. A lawyer is promoted into uniform; a railwayman is promoted out of it. It may be that this is still the only right policy, but there is at any rate a *prima facie* case for an objective review of the whole situation. It would be useful to know the effect that would be produced upon the public as well as the staff if Divisional Superintendents were to appear in their official comings and goings in a uniform appropriate to their high position.

The maintenance of uniforms is at least as important as their design. The practice in this country is for the management to provide them and for the staff to maintain them as best they can. On certain foreign railways the men purchase their uniforms while the management assume responsibility for maintenance. The second method is probably better calculated to ensure a really smart turnout at all times.

The passenger's first contact with transport, however, is not with the staff but with the station entrance. Station entrances to-day are apt to be distressingly evasive. Often they are so artfully concealed that passengers have great difficulty in finding them. The modern cinema entrance may be vulgar and extravagant, but at least it has the merit of announcing itself properly. A strong, simple label for station entrances is badly needed. It may be possible to design a better label than the circle and bar device of the London Transport Executive, but no one has succeeded in doing so as yet. Now that the Irish Transport Company has appropriated this symbol with the addition of a pair of wings, it is a matter for consideration whether the railways of Britain can afford to restrict the use of so brilliant an invention to a single administrative unit. The same label would as a matter of course be used on station platforms. The railways now agree that many more station nameplates are needed on platforms—one plate to a coach length is the accepted standard—and that they should be combined with lighting fittings so that they can be clearly seen at night.

Generally, there is no surer sign of good manners in a transport service than constant readiness to give information, and the ability to express it clearly and courteously when given. Information is given through many channels: through printed matter, signs, and films; in private correspondence; and verbally—whenever possible by specially trained personnel. Great

progress has been made during recent years in the use of all these media. The arrangements and presentation of time-tables and other essential particulars has been much improved; new and specialised forms of lettering have been designed for signs, posters, tickets and time-tables; better types of illuminated and mechanically operated signs and indicators are constantly being developed. The "even system" as practised in the Southern Region might, in this context, be described as the height of civility. But the public require from a railway much information besides that relating to the train services. In the early years of the war, the railways and the London Passenger Transport Board maintained a number of travel information booths in the streets of London. In 35 months of continuous operation a total of 4.3 million questions were answered. This figure gives some indication of the huge demand. Every railway station should display a street plan covering, say, the square mile surrounding the station. Every station outside London should display a diagram map of local rail and road passenger services.

In giving out information, the manner is at least as important as the matter. All human beings dislike being nagged and preached at, and passengers by road or rail are no exception. Effective publicity means first of all avoiding excess. For example, the admirable Swiss official time-table gives the platform numbers for departing trains. Is this really necessary? Again, our public address installations are a great convenience to passengers, but only on condition that they are not abused. Announcers should not be used to duplicate efficient sign-posting. Another enemy of civility is officialese. A ruthless campaign should be instituted against anything beginning with "Notice is hereby given" or "Persons are warned". Forms are often bad offenders.

The choice of language is especially important in that part of an information service which is concerned with education and persuasion. The passenger who wants to be sure of a seat has not only to be told about the times at which seats are known to be available, he has to be persuaded that it is worth his while to go to some trouble to travel at those times and not at other times. He has, in fact, to learn to stagger himself. He has also to be taught to address his luggage properly, to respect non-smokers, to walk on the right, and to keep clear of the doors. The railways need the co-operation of the passenger in making a success of a big and difficult job. They feel enthusiastic about this job, and somehow they have to communicate this enthusiasm to the passenger. The American army of occupation in Germany makes considerable use of handbills giving instructions to

troops. One such handbill starts: "You are now riding on one of the finest trains in the E.T.O." and ends with "Have a pleasant trip!" A well-known store recently used newspaper advertisements to invite the public to come and see some new mural decorations "for the sheer joy of it". The railways cannot always talk like this, but they can convey the same suggestion in their manner of saying the things they do say.

Civility depends on being sensitive to other people's thoughts and feelings. A good example of this kind of sensitiveness is the railways' treatment of commercial advertising. There are many people in this country who are apt to look on outdoor advertising as a kind of nuisance comparable to disturbing noises and unwholesome smells. Persistent agitation has resulted in the setting up of Government control under Town and Country Planning Acts. Railway undertakings have for some time been fully alive to the state of public feeling in this matter, and the work of removing commercial advertising displays from station exteriors and bridges has now made considerable progress. In the same way, advertising on other exterior wall surfaces, like retaining walls, is being carefully arranged under general schemes for planned decoration. But controlled outdoor advertising is only one of the many forms of civility in buildings. This quality of civility goes very deep; it may influence not only the design of the building but also its placing on the site and even the selection of the site itself.

B. Order and Design

In the present paper the word "design" is used with the special meaning now attached to it by people interested in visual appearance. In working for a general high level of good appearance, nothing is too small to matter; the printing on a ticket can suggest the personality of an organisation just as clearly as the lay-out of a station or the furnishing of a restaurant car. In fact, only by the closest attention to detail can a consistent standard be attained. And this consistency is enormously important. A manufacturer does not build up a successful business by producing now and then a first-class article. Neither is an Operating Manager satisfied with occasionally running a train or bus on time. It is exactly the same with design. Unless the quality of design is representative of the undertaking as a whole, occasional good work will be liable to be dismissed as a lucky accident. It is largely for that reason that the central control of good appearance is now generally regarded as an important managerial function.

So great is the value of a general atmosphere of good design that the railways have begun to

take an active interest not only in the appearance of their own buildings but in that of their neighbours. They are aware that in many big towns the station neighbourhood is hopelessly out of keeping with the best conception of what a railway station should be. And so the modern rebuilding plan as a rule provides for the railway to build its own shopping arcades, or to lease surplus lands to neighbours whose architectural manners it can effectively control.

Once order has been established through good design, the next thing is to maintain it through good housekeeping. Stations and trains do not keep orderly and shipshape of their own accord, though many people think they do. The great enemy of good order and good housekeeping is divided control. Rolling stock is fortunate in this respect; stations, which are nominally under the charge of the station master, are in fact liable to become dumping grounds for furnishings, equipment, tools and materials from many different departments. The first thing a railway does when it wishes to keep its stations in first-class order is to make a single department responsible for their good appearance. Any improvement, addition or alteration proposed by another department must then be agreed by the housekeeping department before it can be carried out. It is well known that the high reputation of London Underground stations before the war depended on a rigid enforcement of this single control. Order is a delicate plant to be watched with constant care if it is to be kept in a healthy condition.

Good housekeeping is just as important with old buildings as it is with new. The railways have inherited from the last century a large assortment of well-designed structures, some of which deserve to be better appreciated than they are. Many of the smaller stations, especially those in the West country and in the area served by the old North Eastern and Highland Railways, are fine examples of regional architecture of which their owners have reason to be proud. Future improvement schemes should treat these stations with great respect. The same is true of many engineering structures. The early railway builders knew that good architecture is not confined to habitable buildings with windows and doors. The educated public has always responded to a well-designed engineering structure just as readily as it has to a palace or a cathedral. This response to-day is greater than ever. When people with an interest in architecture and design come to this country from abroad, what do they go to see? Before they visit our housing schemes or theatres or town halls, they seek out things like the Boots factory at Nottingham, the Park Royal brewery and the new Waterloo bridge. Similarly, hundreds of Englishmen visiting the United States have made the journey to the

south for no other reason than to look at the magnificent dams and power houses of the Tennessee Valley Authority. They go to see these things not because they want to know how they work but because their appearance is aesthetically more interesting and more exciting than that of any habitable buildings except the very finest.

Does good design really matter? Its value derives in the first place from the fact that it is the outward expression of efficiency. It is often said by lawyers that it is not enough for justice to be done; justice must manifestly be seen to have been done. And every engineer knows in his heart that it is not enough for a tool or a building to be efficient; it must be manifestly seen to be efficient. "Design" said the late Frank Pick, "is intelligence made visible". The Spitfire, the King class boiler and firebox, the prefabricated platform canopy of the London Midland Region, show, each in its own way, how a new kind of efficiency can be expressed in good design. Well-designed equipment inspires confidence in those who use it as well as in those for whose benefit it is used. That is why it will always be a better asset than equipment having the same performance that fails to "look the part".

Secondly, good design is important because it pays. Are the railways interested in developing more business? Any undertaking using costly capital equipment must necessarily want to employ that equipment so far as possible on a full and steady load. Work must be found for it at those times when work is not naturally forthcoming. The sheer commercial value of good design is too well appreciated to-day to need special emphasis. New crack trains in all parts of the world depend on good design to "sell" them. It usually does. For example, good design is stated to have had a great deal to do with the success of the new Pere Marquette services in an area where the competition of the private motor car is keener than anywhere in the world.

Finally, design is a general social responsibility. It is now accepted by most experts that good design in the things we see around us is an essential amenity that contributes to human health and happiness. As Lord Horder recently put it, "there is a collective state of mental well-being or contentment, just as there is a collective state of physical health", and both kinds of well-being are equally bound up with the morale of a social group. The effect of good design on this mental and physical well-being has been proved again and again in schools, offices, hospitals, workshops, industrial canteens and other places. In the new post-war type of Labour Exchange, for example, the staff suddenly find themselves taking more trouble over their personal appearance and decorating their offices

with flowers. They also work better and faster ; and members of the public are more cheerful and more co-operative. The experts know enough to have some idea of what can be done, but their exact knowledge of causes and effects is still incomplete. Bernard Shaw has referred to the influence of design as an unexplored region of biological science. It is not likely to remain unexplored much longer, and transport undertakings will want to play a part in the work of discovery that lies ahead.

C. Cleanliness

Order deals with relevant matter and prevents one thing interfering with another ; cleanliness keeps out irrelevant matter that interferes with people. Other amenities may be missed ; they do not as a rule cause annoyance and resentment by their absence. Cleanliness does. It is not a breach of the law in this country, as it is in Australia, to sell a cup of tea in a chipped cup, but the psychological effect of chipped cups is a factor to be seriously weighed against the effect of good, hot tea. However retrogressive it may seem to talk about the withdrawal of amenities, it is, in fact, a question whether the withdrawal of cleanliness from a particular buffet may not, on balance, turn out to be more undesirable than the withdrawal of the buffet itself.

A high standard of cleanliness requires the right personnel, the right conditions, and the right tools. Progressive managements know that cleaning is an important function and cleaning personnel is selected and remunerated accordingly. In a good class West End store, the weekly earnings of male cleaners may average as much as £6 10s. od. to £7. Status is even more important than material rewards. The British Navy has shown how a superlative standard of cleanliness can be reached by the use of moral incentives. The fact that there is not an officer afloat who has not taken his turn at scrubbing and polishing has two results : first, the Admiral becomes skilled in the work and is therefore able to carry out his inspection with an expert eye ; secondly, the able seaman scrubbing his deck enjoys, whether consciously or not, the stimulus of a ritual that has been a common experience of all sailors, high or low, for generations.

Of all the essential conditions for efficient cleaning, the first and greatest is a good surface. A good surface is one that does not soil too easily ; that does not show conspicuously such soiling as comes its way ; that is capable of being cleaned with a minimum of effort. Above all, after each cleaning it should look conspicuously clean and it should go on doing this for many years without renewal. Cleaners are like other workers in that they will not give of their best if their labour does not produce a visible result. Brass has fallen

into disuse because of the amount of work it entails, but it is useful to remember the great virtue of brass, which is that it enables a relatively small amount of labour to produce a strikingly beautiful effect, an effect that gives to the cleaner a maximum of pleasure and satisfaction.

The railways are heavily handicapped in the matter of surfaces by the fact that they are the owners of thousands of buildings and other structures that depend for their good appearance on ample supplies of paint and painting labour. Their plastered concourse walls and heavily valanced canopies belong to the age of stucco, the age that produced the old Regent Street and the squares of Brighton. Their rolling stock was designed and finished with the single governing purpose of achieving the highest standard of smartness and polish that the world has ever seen. The years of under-maintenance are beginning to tell. They would have made less difference if the typical British train had been more like a tweed suit and less like a full dress uniform. Hopes of catching up with arrears of maintenance were ominously dashed by a sentence in the White Paper on capital investment in 1948. " Day to day maintenance and small works . . . are being reduced to a minimum by postponement, and all possible use is to be made of the permanent staff on larger works which must proceed ". The prospect is not encouraging.

The second condition of efficient cleaning is light. A great deal is heard about the cleanliness of the American drug store with its heavy and incessant customer traffic. In the newest type of drug store the standard of lighting is equivalent to 50 foot candles at counter level. Lighting of this intensity is probably unnecessary for the normal business done in the store. It certainly must be of enormous assistance in cleaning.

Next to good lighting comes good design. In his planning, in the design of his equipment, the designer can make the cleaner's job either possible or impossible. Any space that is used for dirty traffic will soon make itself unfit for passengers. The railways have elaborate plans for segregating parcels traffic so that passenger spaces may be kept not only clear of obstructing traffic but free from dirt and pollution too. Any piece of waste space is a potential rubbish tip. Any congested area will gather dirt from the concentrated human traffic. Any piece of space that is not clearly visible or readily accessible attracts rubbish as a magnet attracts iron filings. Any sharp internal corner will fill itself quickly with dirt. If a counter front comes down to the floor the corner should be well rounded ; but need it come down to the floor at all ? Walls, cills and copings need proper weathering everywhere to prevent unsightly weather stains.

Buffets and toilets are a simpler problem than premises and rolling stock generally. If the

railways are right in assuming that there exists a public demand for cleanliness in these places, the only question is precisely how much cleanliness the public is willing to pay for. The problem is one of elementary marketing research. The cost will be relatively high because peak loads must necessarily be provided for. In ladies' toilets (an extreme case) it is essential that the cubicles should be inspected and if necessary cleaned after each individual user. The traffic associated with important trains is so heavy that additional staff will certainly be needed if this practice is to be kept up at all times. The situation is further complicated by recent developments in public psychology. Authorities providing public toilet facilities now have to face the fact that a type of sanitary fitting that is fully satisfactory for domestic purposes may be quite unsuitable for public use. This is a design problem of which some railway traffic departments at any rate are not unmindful.

But nothing that the undertakings can do will be effective without the co-operation of the public. Unfortunately, the railways' task just now is made especially difficult by the re-emergence of the problem passenger. For something like half a century the people with which they have had to deal have been remarkably well-behaved. It was not always so. In the early years of British railways some companies were driven to introduce fourth class for problem passengers even at a time when third class seats were "hard". By 1939 the problem passenger had become a limited local phenomenon. To-day there is no service in any part of the country where he does not have to be seriously reckoned with. The magnitude of the problem may be illustrated by some simple figures. During the first half of 1939, window strap replacements on the Great Western Railway were three and electric lamp replacements 500. For the corresponding period in 1947, the figures were roundly 300 and 25,000. The problem passenger does not always flourish among the poorer section of the community only. People from the higher income groups show little respect for other people's property these days, and if they do not use knives on the upholstery they do a great deal of damage with cigarettes.

The question of the problem passenger will recur in other parts of this paper. Suggestions will be put forward for dealing with this menace in various ways. One thing is certain: the education of passengers in habits of tidiness and cleanliness may well prove to be one of the biggest items in a public relations programme for railways. People must somehow be taught to break themselves of the habits of throwing, dropping or secreting rubbish on concourses, tracks and floors; of using their feet to adorn vacant seats, of kicking doors open and hacking

pieces out of counter fronts; of behaving in toilets as they would not permit a friend to behave in their own homes. A great deal more will be required than the display of printed admonitions. To educate means to create a state of mind, and a state of mind can only be built up out of a combination of many influences. The most effective of these influences is the environment itself. It is now accepted by most experts in the treatment of delinquency that badly kept surroundings are a direct incitement to bad behaviour. And so, while a better kind of pig is needed if the sty is to be kept in order, the pig cannot be improved unless one first improves the sty. It is a cruel paradox, but it is one that cannot be evaded. There are of course other means which should be employed at the same time, such as ample supplies of pilfer-proof ash trays and litter baskets. The practice of tidiness like every other job needs proper tools. Psychological research could suggest ways of enlisting devices like concentrated lighting and disinfectant smells. Railway personnel have shewn that they can not only set a fine example in their own persons and demeanour but actively help the public with good-tempered supervision and advice.

Cleanliness is a difficult art, and yet it is the cheapest and most elementary of all amenities. It is, therefore, the great amenity of the poor, and England to-day is a very poor country. The more the uniform grows frayed and tattered, the greater the importance of keeping the buttons bright.

III. COMFORT FACTORS

A. Stance and Sedence

If one bears in mind that our existing railway gauge was originally designed for use with horse-drawn carriages seating two a side, the ease and comfort with which five and even six passengers ride abreast in a modern train seems something like a miracle. Yet there are few subjects over which the railway engineer is taking greater pains to-day than the improvement of seating. The dimensions and inclinations of seats and backs, their modelling or profiling, the degree of hardness or softness, these and other points are being explored. The methods used for this research are a refreshing change from the old days when some high-ranking officer would give all the answers by trying the seats on his own person. And yet, by modern standards they have often been curiously unscientific. In England some use has been made of opinion polls. But opinion polls are notoriously treacherous things to handle, and only specially trained interviewers would be able to secure information of any real value. In America, reliance seems to have been placed mainly on a statistical study of body measurements. It is true that the length of

human bones is one of the first things to be taken into account in designing a seat, but if discomfort and fatigue are to be abolished it is not enough merely to get the main dimensions right. The full scientific data for sound seating have still to be collected.

The most popular standard American train seats of to-day have variable pitch backs which can be adjusted at a number of different angles between the upright position of about 20 degrees and the reclining position of about 45 degrees. So far, no serious consideration appears to have been given to the adoption of such seats in this country. This is probably because they do not readily lend themselves to use in compartment stock. There are three great arguments in their favour. First, the most comfortable pitch for a seat back is largely a matter of personal idiosyncrasy. Different types of passenger, therefore, will get the greatest degree of comfort if each can choose the particular pitch that suits him best. Secondly, much fatigue on a long journey is caused by keeping the body in a fixed posture, and a change of pitch after the first couple of hours can give agreeable relief. Thirdly, the reclining seat is a particular boon to the night traveller, especially if leg rests are also available. This point alone should make it worth serious attention. For various reasons, night travel is on the increase in this country. If the railways had variable pitch seats for night travellers they would hear less about the need for additional third class sleepers.

On long journeys, standing is a form of torture that the railways can do nothing to mitigate, and so they say that it must be avoided and design their rolling stock on the assumption that it does not exist. It seems to be the only way. If accommodation is not equal to the demand, it is for the passenger to decide whether he prefers to stand or to accept trains with a limited ticket issue. On urban and suburban transport systems standing is unavoidable. The volume of essential morning and evening peak traffic may be ten or twelve times the average loading factor for the day. No transport system could provide enough seats for fluctuations of this order. Fortunately, standing for a period of fifteen or twenty minutes is, to most people, not unpleasant, and to some people positively more agreeable than sitting. What does make standing unpleasant is overcrowding and lack of proper support. Thus, in the compartment of a non-corridor coach it reaches an extreme of discomfort. Suburban undertakings deal with overcrowding by reducing the number of seats and so releasing floor space. In the latest Southern suburban coaches the proportion of seating capacity surrendered for standing space is something like 20 per cent. It seems a reasonable compromise. As far as support for standing

passengers is concerned, there is room for considerable research. British road and rail rolling stock have a remarkable variety of special furnishings, but all of them without exception are designed to be gripped with the hands. The builders of American buses and trams have experimented with low level supports of the shooting stick type. The principle is admirable, but there appears to have been little scientific study of the design problems involved.

Comfort in sitting and standing depends not only on proper furniture but also on the planning and arrangement of the vehicle itself. This is another question on which the railways have tried to throw light by means of opinion polls among passengers. They have not, however, always been careful to compare like with like. A well-warmed compartment without draughts, with well-placed lighting, and fitted with comfortable seats and ample luggage racks, cannot usefully be compared with a cold and draughty open coach, with dazzling lights, obviously inferior seats and inadequate provision for luggage. But the most important factor in a comparison between compartment stock and open stock is not so much their effect on the passenger as their relative efficiency from the point of view of maintenance, cleaning and supervision. A simple calculation will show that the difference in the area of wall surface to be maintained and cleaned (excluding window glass) is something over 500 per cent. The space under compartment seats is notoriously difficult to keep clean. The travelling cleaner on a long distance train should be able to attend to the ordinary passenger accommodation as well as to toilets; on the Continent she collects waste paper and orange skins and sweeps crumbs from the window shelves. Could she do all this in a fully occupied British third-class compartment? The answer is doubtful. Then there is the question of supervision and the problem passenger. These and other considerations lend special interest to the American built prototype coach which was shown to British railway experts at the end of 1947. This coach had standard or third class accommodation of the open type, and first class accommodation arranged in compartments. In this coach, and in the old Pullman car with coupé familiar in the Southern Region, lies a possible solution of which more may be heard and seen in the years to come.

B. Lighting

To define ideal lighting qualitatively is easier than to provide it. It should be non-glaring, of a colour kind to the complexion and not too far removed from daylight and adequate in intensity. Extreme shadows should be avoided.

Standards of intensity have had more than

their fair share of attention in the past. It was perhaps natural in the days of candles and oil, when light was difficult to come by, to rate lighting by its intensity; but even then, when the intensity was generally barely enough to get over the "threshold" of vision, bad disposition of the light, resulting in glare, frequently made the worst use of what light was available.

The amount of light demanded for different jobs varies of course with the job, but for all jobs it is continually on the increase and it is very necessary to provide for this in any new schemes. The luxury of to-day is the necessity of to-morrow. Where, for display work in the old days, a few naked flames were sufficient to attract attention by contrast with the stygian gloom against which they were seen, 50 foot candles is not now unusual. Again, 6 foot candles used to be regarded as quite good for typing, but 10 foot candles is the least one would provide now. Actually, however, there are plenty of offices with 15 foot candles where one cannot see as well as with the old 6 foot candles, because of the glaring arrangements of the lights.

While passengers sit opposite each other there is always the possibility of one man's light glaring the other. Diffuse sources of light, such as fluorescent tubes, are a great help and when skilfully applied, as an integral part of the general "architectural" treatment of the interior, can give practically ideal results.

The principal faults in the past, having got beyond the very primitive idea of providing isolated "beacons" of light, have arisen from attempting to apply lighting as an extra after an interior has been designed by someone else. A new outlook has now happily superseded and many pleasing results are to be found in the latest carriages and buildings.

Lighting can have a marked psychological effect which should be used to ease the passenger's journey. It would seem that, broadly, brightness and whiteness are invigorating; restraint and off-whiteness are restful. While it may be to everyone's advantage for passengers to be invigorated while going to or from their train, they may not all want that effect once they are on their journeys. The problem is rather similar to the heating and ventilation problem of reconciling different tastes. Can travellers look forward to the days when there will not only be segregation of smokers from non-smokers, but compartments for toilers, for dreamers, for talkers and for readers, each one with the seats, the heat and the light adapted for its particular purpose?

C. Heating and ventilation

It may seem obvious to say that warmth and fresh air are important, yet it is doubtful whether it is fully appreciated how important they are.

Criticism of the present arrangements, in trains, stations and offices, is all too easy. There are ready explanations for the more glaring deficiencies and the achievement of the ideal is a much more complicated problem than is generally realised. Undoubtedly, however, better conditions would add enormously to the pleasure of travel or work on the railway.

Ellsworth Huntington, Markham and others have written fascinatingly on the effect of climate on the growth of great civilisations. The earlier of these sprang up around the Mediterranean Sea and other very limited areas of the world, where the natural climate was most conducive to efficiency and energy. Expansion to regions suffering from colder winters or hotter summers had to await the growth of knowledge on how to control the climate in which people spend most of their time, by heating their buildings in the winter, cooling them in summer, and insulating them against external cold and heat.

This process of gaining control over the human environment is by no means complete. At the moment the people of this country are having to make do with as little warmth as possible. The right use of insulation and the widespread application of improved heating appliances should give all the control that is needed, with no greater expenditure of fuel, but with incalculable benefits to health and well-being. The British climate, although it sometimes plays strange tricks, is on the whole about as good as anywhere in the world with a modest amount of control in the winter. Even here, however, and although much has been done, there is a lot to be learnt about exactly what conditions are best and how to produce them.

On the world scale the problem is made easier by the extremes that have to be contended with; on the smaller scale of an office or carriage, it is more baffling. Why do people differ so much in the amount of heat and air movement they like? Some reasons are apparent. A tired passenger who wishes to sleep wants a cosier atmosphere than one who wishes to sit up and work. Clothing is another obvious factor. The stage coach habit of wrapping up well for a journey dies hard, but until the railways have learnt how to make everyone comfortable, they cannot expect passengers automatically to remove their overcoats on entering a train, as they would on entering the house of a friendly host. Yet this is the atmosphere the railways would like to create. Transport authorities cannot change their guests' idiosyncrasies—their job is to do their best to provide for them.

Opinion among experts has oscillated widely between fixing the conditions to suit the hypothetical "average man" and allowing full play to individual vagaries. Neither gives complete satisfaction, but it would be interesting to know

which gives the more satisfaction or whether some compromise would be still better. All the well-known snags in opinion surveys apply with special force in this field.

The exclusion of noise and dirt from trains and buildings necessitates "canned" air, i.e. a ventilating system by which all fresh air enters through ducts and is filtered and treated in some way before entering the rooms. All such systems, so far installed, have fallen short of perfection, with the result that, except in the noisiest and dirtiest situations, most people would probably prefer to be able to open a window as they wish. Research will no doubt advance the technique of air treatment and the existing antipathy to it will subside. At the same time, it is to be hoped that noise and dirt will gradually be eliminated. Is it too much to expect that one day each passenger will be able to have just the atmospheric environment he wants, in a quiet and clean world? The accumulated experience of medical and engineering men, tempered with common sense, does meanwhile enable certain "design limits" to be specified. The atmosphere of a crowded smoking carriage ought never to be allowed to become "blue". To prevent this by constant dilution with fresh air is costly in fuel. Simpler, but more efficient air filters, would enable the same result to be obtained with much less fuel, by recirculating a proportion of the air.

Fresh air must be brought in without draught. The current practice is to let it creep in where it can, around doors and windows. It is becoming increasingly recognised by ventilating engineers, however, that the old method of providing for the extraction of air and leaving the input to look after itself must give way to the definite provision for both extract and input, if adequate "scouring" of a room is to be achieved without draught, or stagnation. In one interesting experimental coach, the air is brought in through scoops at the side of the underframe and after being cleaned and heated is fed into the compartments from under the seats, finally being extracted at roof level by standard extractors. While it is possible for this system to produce an uncomfortable draught around the legs if the air is insufficiently heated, yet it has promising possibilities which it is thought should be developed.

The sliding ventilator in the upper part of carriage windows, which is so generally used now, serving as it does the triple purposes of extraction or input of air and an aperture through which to pass luggage or cups of tea, even if it does not achieve the impossible of pleasing everyone, must be one of the most successful compromises ever invented.

The problems involved in enclosing some parts of passenger stations, such as booking halls,

so as to heat them, are discussed elsewhere in this paper, and there are many instances where frequent changes of air by opening of doors makes any method of heating by warming the air very expensive. In these cases high temperature radiation can be very useful. Beams of radiant heat at strategic points, where people must pause in their progress to and from trains, might give a welcoming and grateful atmosphere which would be specially appreciated during a cold spell.

An interesting suggestion has been made that passengers do not normally stay long enough in suburban trains or waiting rooms for it to be possible in cold weather to get thoroughly warmed through and comfortable as they would at home; and that the problem is really how to make them feel less cold as quickly as possible. It is suggested that low-temperature foot-warmers imbedded in the floor may be the best way of providing this sort of "first-aid" warming. Certainly the old-fashioned railway foot-warmers were comforting, if a nuisance in other ways; and their resuscitation in a new and convenient form appears well worth a trial. A combination of this idea with beams of radiant heat might well prove the answer to some of the more intractable heating problems.

A wealth of new materials is becoming available with which insulation without weight can be provided. Double windows that will not mist over, are now being made, although simpler techniques for their construction would be welcome. Advances can therefore be expected in methods of combating the difficulty of the cold windows and walls which came in when the Victorian padding, weight, draperies and small windows gave way to more modern ideas of hygiene, light and lightness.

What of the future? Some of the problems for research have been indicated, but there is much existing knowledge that could be applied to give greater comfort with less fuel.

IV. SERVICES AND INSTALLATIONS

A. Reception

Railways, since their stations were first built, have had many demands made upon them for the better reception of passengers. They have been ready and even eager to meet these demands to the best of their ability. In this gradual multiplication of amenities, the value of space itself as an essential amenity has sometimes been lost sight of. To-day, it is generally accepted that the value of all such special facilities depends on a sufficiency of space. Congestion is a positive nuisance, and if a buffet or toilet cannot be provided without causing unnecessary congestion the result on balance may well be a loss of amenity instead of a gain. And so before any new

improvement is planned, space requirements are nowadays carefully analysed and the additional service is provided only upon the scale that the available space will readily allow.

In the provision of shelter for waiting passengers it is useful to remember that a short wait at a suburban station is in no sense different from a wait by the roadside. The free-standing roadside shelter used in London suburbs screens against winds from all directions; similar protection is provided on railway platforms by screens having some form of return end. Yet the railways to-day are handicapped by being the owners of many hundreds of suburban waiting rooms requiring attention, in the form of supervision, heating, cleaning and maintenance, that they lack the means to provide. As they watch them deteriorate they cannot help thinking how much better off they would be if these depressing places could be dispensed with.

In smaller main line stations it is possible to let the passenger move towards his platform by way of a comfortable well-heated room with self-closing doors. The most successful small ticket halls to-day are those which combine the functions of ticket hall, waiting room and enquiry office in a single room of good proportions. As this room can be properly heated there is no more reason why the counter serving space should be fully enclosed than there is for enclosing the serving space in a post office or a bank, except the types of ticket racks at present in use. Many small stations have three separate rooms arranged in a row: a central ticket hall with a ticket office on one side and a waiting room on the other. It would cost very little to throw the three into one and to provide draught-proof doors and adequate heating. To give some degree of privacy for the ticket office telephones and to protect them from noise is a simple job for the modern designer.

In large stations, ticket offices, waiting rooms, and enquiry offices are grouped together either in the middle of the concourse or around its periphery. Here the waiting room plays a more important part. There are three alternatives: to combine it with the ticket office, as in the smaller stations; to combine it with a buffet; or to make it a separate room. The first method involves withdrawing the ticket office from the concourse, though there need not, of course, be any physical separation between the two. The second has many interesting possibilities and is now favoured by most experts. The third is generally regarded as thoroughly unsatisfactory. A well-kept waiting room requires the presence of staff of one kind or another to keep it under continuous observation. Besides, the public appreciates the atmosphere of keen and willing service that is created by seeing the staff at their work.

Railway stations were designed at a time when the only passengers who mattered descended from private carriages while servants took all portable belongings in their charge. To-day the railways have to think again from the beginning. What, for example, happens to luggage in a waiting room? As a rule the passengers arrange it on the floor and seats in such a way as to cause a maximum of inconvenience to other passengers. It should be possible to design clean and tidy parking places arranged in full view of the owners. In buffets and toilets the same problem occurs in an aggravated form. There are also doors to be opened and shut. A high proportion of passengers have both hands occupied carrying something, and the foot is often used. It would be interesting to see what could be done with doors set in motion by a photo-electric cell. There is a widespread demand for luggage registration as distinct from luggage in advance, and all plans for left luggage offices will have to take account of the future introduction of this facility. The railways cannot feel that they have perfected their reception arrangements at stations until the handling of luggage has become as smooth and trouble-free as the railway journey itself.

B. Food and Drink

Anyone who has travelled much on foreign railways remembers with pleasure the smooth and agreeable efficiency of the three-course sitting as normally worked on British restaurant cars. To-day the railways are having to ask themselves whether this is what the majority of the travelling public really wants. In meeting a greater variety of demand, it is generally agreed that the buffet car has been strikingly successful. There is a wider flexibility of service for passengers of all types, though perhaps a shade less wide than in an American restaurant car, where one may consume anything from a 15 cent peanut sandwich to a meal costing more than £1 and including a two-dollar sirloin steak. Tea, coffee and soft drinks can be quickly obtained. If the greatest number of passengers are to be satisfied, time is the crucial factor, and the buffet car certainly is efficient in this respect. Possibly even more interesting is the small buffet bar installed in an ordinary open coach. Coaches of this type have been in service for some years in the diesel car units running between the Midlands and South Wales where they have proved immensely popular.

The consumption of food and drink in compartments may constitute a higher or a lower standard of catering according to the point of view. If the passenger is a British Cabinet Minister carrying his own luncheon basket or an American business man having a restaurant car dinner brought into him, it is

usually regarded as being in the former class. What we may describe as the mess room method of catering on trains has so far received only superficial attention. The pantry services in the Southern Region are designed for this purpose ; they are the equivalent of the samovar which is standard equipment in every coach on a Russian main line train. The Western Region has under construction an automatic buffet car which is likely to lead to more general eating and drinking in ordinary passenger seats. If it is intended to extend and encourage this practice, the provision of some elementary equipment will have to be considered. Anyone who has tried to balance a tray on his knees while pouring out tea for other passengers will know something of this problem. The latest types of seats used in air liners have bracket fittings for food trays that engage in the arm rests so that the passenger at least has his legs free as he has when in bed with an invalid tray. On the Continent, shelves and little hinged tables under the windows are common. Sometimes there is a litter basket just below. Long distance trains are happier places if they provide a decent resting place for apple cores and sandwich wrappings.

Station restaurants, like station hotels, originated from the interesting and useful arrangement whereby horse-drawn stage coach services started from well-known inns. Is there any justification for continuing to serve meals of several courses within the station precincts ? Only proper research can give the final answer to this question. The continuous flow of traffic rather suggests the snack bar with counter seats. By far the pleasantest type is that in which an attendant works inside a horse-shoe counter seating a maximum of about twenty customers. If the floor on the service side is sunk eight or nine inches below the level of the floor used by the public, the counter and seats can be low like ordinary tables and chairs. This has proved a popular arrangement in many places.

The subject of food and drink is one on which the public are specially sensitive at this present moment. Some of the bitterest of recent Press criticisms of the railways have been concerned with the inadequacy of catering services in the early morning. The railways, however, have known for some time that these services will require a careful overhaul if they are to regain the popularity they once enjoyed. They would like to raise their station buffets and restaurants to such a standard of excellence that the public generally would be drawn to them as well as the passengers using the station. Certainly good food, scrupulous cleanliness and attractive presentation would bring an immediate response. The Americans have brought back our old word "tavern" on their trains, and the restaurant car steward is known as "the host". Some of their

station cars and buffets have names and inn signs. The Sloop would remind passengers for Devon and Cornwall of the delights in store for them and a touch of humanity would be brought to Liverpool Street by the Sign of the Blue Boar.

C. Toilets

The railways have always taken a generous view of their responsibility for providing toilet accommodation for the use of passengers. Not till 1910 was there any clear pronouncement as to their legal obligation in this matter, and even then the position would not have been defined if the London Brighton and South Coast Railway had not disagreed with the Metropolitan Water Board over a bill for water rates.

Are the railways trying to do too much ? Certainly their original standards for the provision of toilets on station platforms have been largely obsolete since corridor trains came into use fifty odd years ago. Yet toilet accommodation on platforms often remains on a lavish scale ; at the Ealing Broadway joint stations for example, there are no less than nine separate toilets, five for men and four for women. Such toilets are usually placed at the extreme ends of the buildings, and are particularly difficult to keep under observation. Which is likely to please the public best : maintaining all existing station toilets with some improvements, or maintaining a few in first-class condition ? There are many places to-day where a local authority has provided excellent public toilets within a few yards of a station. Such a place is Reading, where the municipal toilet is situated in an extension of the station subway. There are many other places (Ealing is one) where it would seem the obvious duty of the authority to provide facilities which would make railway toilets redundant. For years now, the London Transport Executive has been consistently reducing its accommodation in consultation with local authorities. On a careful examination, the railways might easily be able to divest themselves of quite a number.

Since the railways were first built, the country's standards of personal cleanliness have undergone something like a revolution. More and more, passengers will want to keep themselves clean and will expect reasonable facilities for doing so. Meanwhile, the railways for seven years have been practically denuded of soap and towels. Their chances of getting better supplies are remote. Are they going to leave their many thousands of wash basins to be displayed like copper bed warmers and other historical curiosities ? Experiments have been made with containers for liquid soap and soap substitutes and with electric driers. It would not be unreasonable to ask for a penny in the slot in return for either of these facilities, or for a

ration of hot water, a costly fuel-consuming commodity, by the way. Solid soap is now produced in single portions in the form of a small sheet about the size of a visiting card. It might be possible to sell such portions with a paper towel or two, and their sale might even be extended to station trolleys and other channels.

The ladies' waiting room too often is simply a place where a passenger waits not for a train but for a vacant toilet. The railways are making a careful study of requirements so that this particular form of queueing may be avoided in future. This study, incidentally, would probably show that 1,000 square feet of waiting room at Reading and 1,300 at Birmingham (Snow Hill) is more than is really needed. There is a great deal to be said for replacing the term "waiting room" by something like the American "retiring room", and for designing and furnishing the room for use rather than for mere waiting. Long distance travellers now need make-up cubicles each with a looking glass and a dressing table shelf. The average woman does not look her best after half a day in a train, and leaning over a seated passenger in a compartment is not the most comfortable posture in which to powder one's nose. No one would begrudge a charge of even as much as sixpence for this facility. Soft lighting, a drinking water bottle, a couple of pictures, are trifles that would earn a return worth many times their cost. The lack of any special provision for small children is a strange omission which no doubt will be rectified in future schemes.

On trains the problem of providing special ladies' toilets is difficult, though there were some interesting experimental coaches before the war. Probably the simplest and most economical way would be to make such a toilet a standard element in the planning of buffet and restaurant cars.

D. Shopping

The modern traveller when passing through a railway station wants to be able to buy newspapers, periodicals, books, postage stamps, cigarettes, tobacco, fruit, flowers, safety pins, aspirins and a number of other odds and ends which he may either use or consume on his journey or take with him to his destination. No provision was made for these things at the time when railway stations were designed and built. Later, when the first bookstalls and kiosks appeared within the precincts, they did not form part of a general plan for giving additional service to the passenger. What happened was that ingenious estate agents arranged for existing commercial firms to come in and ply their trade. Yet all things considered, the result has been highly satisfactory. The natural operation of the law of commercial supply and demand have brought to the public a choice of facilities which

correspond fairly closely to their commonest needs.

The modern tendency, however, is for passenger shopping to be brought into the field of the railways' general scientific enquiry and research. This shopping is seen to fall into three well-defined categories. There are those elementary necessities for all travellers, reading matter and tobacco. Next there are, at the big stations, the fruit shops, sweet shops and chemists' shops that cater largely for long-distance family travel and that are of special importance at holiday times. And lastly there are the shops that enable the urban worker to make a last-minute purchase on the way home. This is the kind of business that flourishes especially on London's Underground. But so long as the choice of articles for sale is left to the retail distributing firms the railways can never be certain that passengers' needs will be fully met. For example, it is possible to buy an odd pocket handkerchief at St. James' Park Underground station but not at Euston or Waterloo. And there is no station in the country with a real book shop such as we find in American stations, no station in which one can borrow a book to read on a journey or to take home in the evening. Handkerchiefs and books for borrowing may or may not be commodities that railway passengers would like to have provided for them; the interesting thing is that this kind of question is nowadays being seriously asked by managements. The question is being studied also in its application to long distance trains. Fruit and sweets would have a ready sale. A news ticker such as we find on some American trains is probably unnecessary, but a travelling news vendor would be useful.

The travelling public is interested in information about shopping as well as in the act of shopping itself. Since the railways exist to serve the public, they have to consider what the public wishes to learn as well as what the advertiser wishes to say. The public is clearly pleased with the charming and witty advertising of a certain well-known brewery and with the interesting historical reminiscences of another. Posters and showcards of this quality have an entertainment value that deserves to rank high in our list of amenities. The question is often asked whether trade advertising on stations, buses and trains is necessary or justified. The answer is that the public has made it necessary by refusing to pay the full cost of transport in the form of fares and charges. But now that the combined railways have become one of the country's largest individual purveyors of advertising space, their responsibilities in this matter will have to be considered more seriously than ever before. Commercial advertising should be part of a general plan for using space and time for purposes of information or entertainment. There are

occasions where trade advertising is welcomed and others where it is not. Thus, in some foreign newspapers we may see, say, a toothpaste advertisement repeated three or four times in the middle of a leading article. The best English newspapers do not do this kind of thing. Nor do the best English stations distract their passengers with untidy poster displays. The Swiss railways have simplified their problem by standardising one single size of commercial poster. Another interesting device is the London Midland Region scheme for concentrating all advertising in a continuous high-level frieze. The station of the future will either be without any advertising, or it will have its advertising laid out as carefully as it is to-day in the pages of a high-class women's magazine.

E. Entertainment

The first and best of all entertainments in a modern station is the railway itself. Transport people, like so many other experts, find it very difficult to appreciate the enormous and fascinating interest with which the public regard their work. The London Underground has done a little to gratify this interest by its display of train recording clocks. But there are many more things to be done. Waiting and refreshment rooms with large observation windows overlooking the concourses are being seriously considered for our stations of the future. A running commentary should be broadcast on arriving trains as well as on departing ones, and at some stations on passing freight trains also. Room should be found for some models and other technical exhibits. The elaborate railway system installed at Amsterdam Central station in 1946 appears to have given the public the greatest satisfaction. There is all the material at hand for making a visit to a railway station at least as interesting and instructive as a visit to the Science Museum or the Zoo. The same desire to see a transport undertaking at work is being increasingly satisfied by the use of technical posters explaining the working of locomotives and of signalling apparatus and other devices.

Passengers are also entertained at stations by means of pictures, films and miscellaneous exhibitions. The most familiar pictures are those that take the form of posters of landscape and architecture. These posters are of two kinds: the descriptive illustration, and the imaginative work of art. There is room for both kinds of poster in a modern transport undertaking. The factual illustration tells people about places in which they are interested or of which they like to be reminded. The imaginative painting or lithograph creates widespread comment and discussion among those who take an intelligent interest in modern British art and artists. That these people to-day represent a rapidly growing

public may be seen from the attendance at current exhibitions and from the amount of attention that is given to art subjects in the newspapers and in bookshops, in B.B.C. programmes, and among discussion groups in industry, in the armed forces and in schools. A picture that interests art experts does at least as much to build up goodwill as a new lighting fitting that appeals to lighting experts or a new tool that attracts the attention of engineers. But pictures need not necessarily take the form of posters. Waiting rooms and buffets, staff mess rooms and canteens, are obvious places in which to use standard size glazed frames with a changing display of lithographic prints, like those issued by the Arts Council. Messrs. Lyons and Co. have recently started a scheme of this kind for their teashops; the Brewers' Society in their "Recording Britain" series use original drawings and water colours.

The railways so far have been content to leave the showing of films in stations to commercial exhibitors. None the less they are now fully aware that the film is a medium of information and propaganda which should be increasingly used for the railways' own purposes. Since the Post Office Film Unit produced the famous short documentary "Night Mail", a large number of short films upon subjects associated with transport have become available. Nature films and films of topographical interest are also likely to be used. The question has been asked whether a passenger holding a rail ticket costing, say, 5s. or over might not be allowed to spend twenty minutes at a film show without additional charge. A few carefully chosen advertising films would help to defray the cost, which in any case would be small.

The unfortunate thing about exhibitions is that they take up a considerable amount of space, and most railway stations are short of space and liable to overcrowding. Yet the small Underground station at Charing Cross has shown what can be done by setting aside an area of roundly 1,000 square feet for this purpose. It was in this modest space that the Government policy for educational exhibitions was first initiated. There are signs at the moment that the educational exhibition has perhaps been a little overplayed, but as a medium for conveying information in a strong and convincing form it will certainly have to be included among the more interesting amenities of the big modern station.

A number of ideas for entertaining passengers on trains have been tried from time to time, including newsreels and the reproduction of wireless programmes. If the public have not as a rule taken kindly to these innovations, it is no doubt because they are liable to interfere with the most popular entertainment of all, which is looking out at interesting scenery. The railways have made great efforts to give passengers

a better view from trains. The old drop and side lights have been replaced by large unobstructed sheets of glass. Diesel cars and observation coaches give splendid visibility, but in this country they do not as a rule run through country remarkable for scenic beauty. For a really good piece of scenery, even better than the backward view is the forward view obtained in the latest American double-decker coaches with a bulk-headed upper deck. Within our 13ft. 6in. loading gauge this might at a pinch be just possible, especially if the observation deck could come over a shallow bottom compartment designed for luggage or equipment. If the railways are interested in foreign tourist traffic they should build a coach of this type for the magnificent trip along the edge of Cardigan Bay.

F. Special Traffics

Railway managements have been much concerned about the present system of first and third class travel. It is felt by many that the system as now operated is out of date, and in any case the use of a special designation like "third class" for normal or standard accommodation is becoming increasingly distasteful to the travelling public.

Dissatisfaction is not confined to the third-class traveller, who clearly expects railway accommodation to be shared out in equal rations like other popular commodities in short supply. Overcrowding on trains invariably increases the demand for first-class tickets, and those who buy them do not like to feel that they have been made to pay cash in advance for a non-existent article. The unnecessary strain on the staff whose duty it is to compose ruffled tempers is equally to be deplored. However well the present system may have worked during the period when the bulk of the present rolling stock was designed and built, it is not working particularly well at the present moment. "Heads I win, tails you lose, is the railway motto" was a typical Press comment the other day. The railways in their own interests as well as in the public's would like to bring this unsatisfactory situation to an end as quickly as possible.

During the last century a considerable number of men and women in this country were prepared to pay heavily for the privilege of separating themselves from the mass of their fellow citizens. To-day the few first-class travellers interested in social exclusiveness are of far less importance than a new type which is rapidly taking their place. This new type is the business man or public official who wants to read, write or discuss business matters on the way. The research that is now under consideration is likely to shew that he regards his train in a very practical light. It is a place to work in, functional in the same sense as the post office sorting van is functional. The business and administrative passenger

values his time, as the L.N.E.R. discovered before the war with their extra-high speed trains; he has a job to do and is accustomed to paying for a place in which to do it. Because of this, simplified booking is another facility which would be much appreciated. If British railways were to adopt the latest American practice, a business man, having reserved his seat by telephone, would buy his ticket on the train as he now does when travelling by bus.

Business and administrative people who make railway journeys habitually use the big railway hotels for what the ordinary hotel manager might sometimes describe as illicit purposes. Making no pretence of wishing to sleep or to eat there, they will use the hotel telephones, its toilets, its facilities for writing letters and making appointments with local business men. The railways in the past have gladly allowed these and other liberties to be taken; a number of important stations, however, are without such hotels; where hotels have been planned (as at Swansea, for example) the plans are not likely to mature for many years. Further, there are probably special requirements for which the hotels are not at present equipped or organised. For example, the needs of business men from overseas are being met by a firm recently set up for this purpose in the west end of London. Office and secretarial facilities are provided; there is a reference library and conference room; hotel rooms are booked, appointments are arranged, and every kind of enquiry is dealt with. A similar service is found at certain American airports. It would serve a very practical purpose if railway research could be concentrated on the problem of catering more fully for the business and administrative traveller at the beginning and more particularly at the end of his journey.

Another type of traveller to whom considerable thought is being given is the mother who makes a long journey with one or more small children. The railways know, from questions in Parliament, from resolutions passed by women's organisations, and from other indications, that there is a real demand for special facilities. The demand is no doubt greatest on holiday trains with their heavy family traffic, but it is not confined to these. Only a small amount of accommodation would be required: a single special compartment with an adjacent toilet would go a long way on a train. Pairs of compartments with a common toilet were for many years standard practice in British non-corridor coach design. A similar plan is now used in Sweden; there is a second rack fixed below the main luggage rack, which can be used as a cradle; the toilet fittings include a small flap table and a chamber pot. Some American railways hire out special babies' pillows. It may be possible in certain cases to consider the employment of an attendant. What would

such an attendant do? On American trains she prepares or heats the baby's milk or other food; she looks after the baby while the mother has a meal; she takes care of unaccompanied children. She may be a trained nurse and carry a first-aid outfit. If she is a matron on the Chesapeake and Ohio, or a stewardess-nurse on the Pennsylvania, she also assists elderly people and invalids anywhere on the train. It should be mentioned that most American restaurant cars provide special light meals for children; a typical supper is stewed fruit and toast with cocoa or milk. Special illustrated children's bills of fare are perhaps an unnecessary refinement, though one must remember that they help to solve one of the most difficult problems arising with small children, which is to keep them occupied and amused on a long and tedious journey.

CONCLUSION

In trying to formulate some concrete suggestions for purposes of discussion, the authors propose to concentrate on the problem of making an effective beginning.

At this present moment, public criticism of the railways is mainly concerned with two things, punctuality and cleanliness. If next Monday morning, by some miracle, the railways could turn out every train and every station in this country absolutely clean and run every train on time, all other shortcomings would be as nothing, and all their sins would be forgiven them. This paper is not concerned with timekeeping, but it is very much concerned with cleanliness. As an objective for immediate action, it has much to commend it.

But cleanliness where and when? Whenever a commodity is in short supply, a clear choice must be made between dispersal and concentration. Cleanliness is such a commodity. Paint is another. Some engineers use their paint ration to give the highest aggregate of protective effect. They spread their paint thinly over the most vulnerable area, in what they call a "patch coat". In this way much property is safeguarded; human satisfaction is not measurably increased. Other engineers select important stations, and give the whole of these stations two or three good coats on a surface thoroughly cleaned and prepared. This policy during the last two years has been followed with well-deserved success in the Southern Region. The authors would plead for the boldest application of this second policy in dealing with the restoration of cleanliness. They would advocate the improvement of ten carefully selected amenities by one thousand per cent rather than the improvement of one thousand amenities by ten per cent. The problem is to demonstrate to public and personnel alike how alive and forward-looking the railways are, how much they are on top of their job. The things

that are done must be noticed. They must, therefore, be done strongly and decisively, with a maximum of "punch".

One possible method would be to select certain trains; another to select certain stations or parts of stations. The first method has already been tried in connexion with crack expresses. A partial attack on stations might stand a better chance of success. Of all parts of stations, waiting rooms and ladies' toilets would seem to be the most suitable. Junction stations are especially important. The premises selected would have to be of that type which is, or could be, kept under supervision by railway staff. The waiting rooms must be dual purpose rooms used either for the sale of tickets or for the sale of light refreshments as well as for waiting. A limited amount of alteration work would therefore have to be provided for.

It would be the main purpose of these waiting rooms and toilets to represent to all the world the full standard of cheerfulness, fine service and perpetual cleanliness that the railways hope one day to apply to the whole of their system. For this purpose they might be marked with some kind of badge; they would be Silver Star Rooms, or whatever one chose to call them. They should be signposted and marked in the time-tables as the Swiss mark their hot and cold station buffets. But their finest advertisement would be the staff responsible for service, supervision and cleaning, a hand-picked, specially trained body of men and women who would not be afraid to set themselves the highest standards in hard work and quality of service. Immaculately clothed, carefully valeted and groomed, the women in particular, in their appearance and demeanour would set an example to the most fastidious passenger. Incidentally, the problem of special rates of pay for such a crack force would have to be faced.

Side by side with such a positive programme, this first stage might with advantage include the review of redundant properties suggested by the President of the Institute in his inaugural address. This is another aspect of the concentration of resources. The railways have in their pigeon holes many reports on under-employed branch lines and stations. No doubt these papers will be looked at again in the harsh light of present-day facts. The zonal organisation for miscellaneous goods has reduced the number of goods stations used by something like 85 per cent. It has enabled the railways to get rid of hundreds of goods sheds once thought indispensable. At this moment, goods stations handling full wagon loads are being reviewed and by 1950 it is likely that many will be closed altogether. The redundancy may not be as great on the passenger side, but it is surely considerable. Other things besides entire stations might be

examined. There are many waiting rooms and toilets that would not be seriously missed. Where waiting space on platforms requires protection from the weather, screened shelters will often meet the need. In those waiting rooms that cannot be done away with are many cast iron stoves that will never be used again, many large tables that do not appear to be serving any particular purpose, many photographs that have long ceased to interest or amuse. It may appear that these things are costing the railways nothing. They are, in fact, costing them a great deal. They are sapping their energies, they are dragging down their standards of housekeeping, they are wearing down their greatest asset, their dignity and self-respect.

As far as rolling stock is concerned, trains are at this moment circulating in all parts of the country with first-class accommodation for which no imperative demand exists.

To avoid waste, a programme of this kind would have to be carefully related to long term requirements. The railways at this moment cannot afford to make changes that would have to be unmade when they come to the next stage in five or ten years' time. Everything done now must be, in fact, an instalment of something bigger. The trouble about all existing plans for amenities is that while in the aggregate they are seen to be large and far-reaching, they are in fact a collection of separate pieces each of which in its own particular context is a very small piece indeed. Amenities are the tail end of the new works plan, which is mainly concerned with the improvement of track accommodation. They are the tail end of the mechanical engineering plan, dominated by the huge problem of securing a higher output of motive power with less labour, less equipment and less fuel. They are the tail end of the engineering maintenance plan, which

has become a desperate race against rot and corrosion and general decay. They are the tail end of the personnel plan, in which the determination of wages, hours, and conditions competes for attention with the difficult questions of recruitment, training, and upgrading. They are the tail end of a hotel plan, the first object of which is the efficient conduct of 53 large and popular hotels. In all these great and important plans, passenger amenities are a kind of residuary legatee, a Lazarus looking hungrily for the crumbs from what, alas, is now only a poor man's table.

Partly as a result of this dispersal of interest and authority, existing knowledge of requirements shows considerable gaps. Managements know a great deal. There is also a great deal that they would like to know. Their knowledge, too, is of different qualities and kinds. Some of it is based on objective research carried out by scientific methods so that the variables are accurately known. Some of it is traditional and therefore limited to methods that are rapidly falling out of use. Some of it is little more than opinion. Greater consistency in the methods used can only be got by breaking through the barriers of specialisation, by securing a combination of many different minds—the physicist's, the anthropologist's, the engineer's. It is not enough that the specialists should pool their results; they should collaborate in producing their results. That is the way to get complete and uniformly reliable information, the only sound basis for any long-term plan. Above all, a general policy for amenities would enable the railways to form clear and distinct ideas of what they want to do about the whole of the physical things that affect the human situation, and in their particular business the human situation has never been more important than it is to-day.

(Continued from page 622).

The sentiment one likes to have is that, with universal transport efficiency there would not be hungry men, women and children in the world, but how long must we wait for this?

Incidentally there is an enormous wastage of food commodities in those countries such as Argentina, where a superabundance of these products now exists, and there are commodities of food which could be moved much faster and freely from those countries with plenty to those countries that are so short of food, provided transport facilities were made efficient.

It seems to me that an effort should be made to get an ample co-ordination of transport efficiency, and instead of vast sums of money being spent

on luxury services, money could well be spent on railways, on roads, on vehicles, on ships, and on ports so that the world would be made a happier place to live in and, after all, nobody can be happy or contented on an empty stomach and hunger means discontentment and misery which can be the cause for war.

PREVIOUS EXAMINATION PAPERS.

The examination question papers for 1944-46, published in a single booklet, are now out of print. The Associate Membership papers for 1944-46 are still available (price 1s. the set), and also the Graduateship and Associate Membership papers for 1947 (price 1s. the set).

THE WORLD PROBLEM OF TRANSPORT

By R. VEITCH, M.Inst.T., Acting Chairman Argentine and River Plate Centre

Address at Inaugural Meeting of 1947 Session at Buenos Aires on May 2nd 1947.

The ills of this rather topsy-turvy world in which we dwell to-day have a distinct relation to transport and its tributaries or rather to forms of land and sea transport that have either failed in realisation or have broken down. Transport by air has to be excepted as that is constantly improving and extending. But it is the bulk movement of commodities that is giving international concern.

One of the main causes that has brought about disorganisation is the calamitous drop in coal production in the United Kingdom. As far as I have been able to ascertain by a study of figures, to-day's production of United Kingdom coal is just about the same as it was 50 years ago. But then some millions of tons were exported being in excess of home requirement.

Just before the first World War, the British output of coal was at the annual rate of 287,000,000 tons per annum of which about 7 per cent or 20,000,000 tons was consumed at the collieries, leaving 267,000,000 tons for home and foreign markets. Of this 77,000,000 tons were exported leaving for home consumption 190,000,000 tons.

The home markets for this 190,000,000 tons were approximately divided into:—

Used in the metallurgical industries	...	29 per cent	55,000,000	
General manufactures	29	" "	55,000,000	
Railways	...	7	" "	13,000,000
Gas making	...	9	" "	16,000,000
Domestic consumption	15	" "	30,000,000	
Bunkers shipped at U.K. ports	...	11	" "	21,000,000

Look at the picture of Britain's coal to-day! The production seems to be not sufficient for home requirements to work at anything like full blast so that coal may have to be imported from abroad—also instead of having something like 75,000,000 tons for export and transport to neighbouring countries and other places abroad for fuelling, factory, and other purposes, there is none.

Those countries and places abroad that used to import from the United Kingdom must now look elsewhere for their coal supplies and that must generally mean a much longer haul, coal of poor quality and at higher cost. In any case industry is held up by shortage or difficulty of coal supplies with the consequent delay in manufactures and all kinds of transport have thus been unable to get renewals or new machinery without a long wait.

Three fundamental points of transport as

accepted by authorities are: (a) That ports may be regarded permanently as junctions between transport by sea and transport by land; (b) that the speed, efficiency, and economy with which they carry out their functions vitally affect the two forms of transport which they link; (c) it has been found by experience that port terminal facilities and port charges are frequently a decisive factor in the economic situation.

And although this country of Argentina has been far removed from the sphere of war actions, her transport problem has likewise gone to pieces, and the fundamental points that ports must be regarded permanently as junctions between transport by sea and transport by land and that the speed, efficiency and economy with which they carry out their functions vitally affect the two forms of transport which by land simply do not exist as far as Argentine ports are concerned.

The Port of Buenos Aires is the worst offender, and you can have little idea as to the number of complaints that come in daily from overseas about the delays to which ships are subjected.

Not only are the ships delayed in delivering cargo which receivers have been waiting so long to get after the war years in order to put their plants and machinery in proper working order or to extend them, but a great deal of the cargoes delayed are part of the transport materials required for railways, motor vehicles, etc.

To-day there are 31 ships waiting turn to discharge their cargoes to deposit berths. Each of those ships will have to wait idle for about 20 days and when they do start, the discharge may take about 30 days or perhaps more and then the cargo has only got as far as the customs sheds. It then has to be cleared through customs and that can be another lengthy operation.

Nobody can calculate with security how long a package will occupy in transit from a factory in Europe to a plant in the Argentine, as such a thing as a time-table for rail-ocean-rail for transport simply does not exist, as the co-ordination is non-existent.

In normal times it has been estimated that only one-third of the owners' costs of running a ship is attributable to the actual navigating time of his vessel and that half or more is made up of expenses incurred in port. With the hold-up of ships in all parts of the world by transport delays, some on account of port equipment and others on account of labour disturbances, rates of cost for expenses incurred in port must be completely out of focus to-day.

(Concluded on page 621).

PUBLIC RELATIONS ON RAILWAYS

By **GEORGE DOW**, A.M.Inst.T., Press Relations Officer, L.N.E. Railway

*Extracts from paper read before Sheffield and District Centre on October 6th 1947.
In the Chair, E. J. Shaw, M.Inst.T.*

Although public relations work in its modern form came into being in the United States in the early years of the present century, it is only during comparatively recent years that we have heard much about it in this country. Much that we have heard has been misleading, erroneous or just nonsense, for which some of its less qualified practitioners, who have given it an aura of mystery, are partly to blame. As a result, it is frequently misunderstood.

To what does public relations really amount? Probably one of the most lucid explanations is that given by the American, Verne Burnett, in his fascinating book *You and Your Public*. In this it is said that public relations simply means other folks relationships with whatever you are, or do, or say. "Or you might say," and I am now quoting from the book, "public relations means trying to understand other people as individuals and groups and then trying to influence them. Some would leave out the 'influence' part, but I consider that the necessary follow through. Publicity, propaganda and advertising are tools used in public relations work."

From the foregoing remarks of Burnett one comes more easily to a definition of public relations which, although it can be expressed in many ways, is, in my view, simply this: "Public relations is the art of obtaining and maintaining mutual understanding and good relations with the public at large."

Now it is obvious that good relations with the public are most needed by those firms, undertakings, Government departments, professions or any other bodies or groups which have many contacts with the public and one could hardly think of a better example than a transport undertaking, such as a railway.

In an organisation so large and widespread as a railway, the preservation of goodwill with both users and potential users of the services provided, plays a vitally important part. Indeed, the greater and more complex the organisation from the public point of view, the more urgent is the need for the maintenance of goodwill. And that is a never-ending task that ranges from dealing promptly and dexterously with what might appear to a railwayman to be a trivial complaint or suggestion, to the steering of a strangely assorted public towards a sympathetic appreciation of the problems that daily beset a railway undertaking.

TOOLS OF PUBLIC RELATIONS

Alphabetically the first tool of public relations is advertising, which can be divided into four

kinds, namely, sales advertising, sales-cum-goodwill advertising, goodwill advertising (which is also called institutional or prestige advertising) and propaganda advertising.

The next tool of public relations is contact work. On a railway its possibilities are limitless for it is literally true that every member of the staff who comes in contact with the public is a public relations officer of the undertaking. Every one of them, officer or station master, ticket collector or porter, booking or enquiry office clerk, canvasser or catering attendant can do invaluable work, in the aggregate, by seeing, each in his or her own way, that the public are as contented as possible with the services for which they have paid or are being encouraged to pay. Nor must be forgotten those who correspond with the public on behalf of a railway. The tone of a letter can be so easily reflected in a well chosen phrase which, unlike the spoken word, will remain as a permanent visual record of sympathetic consideration.

The public relations officer himself has an even wider field of contacts. He must see that all business contacts likely to be of value to his employers are maintained and, if he is a wise man, he will constantly look ahead, forming new contacts where future developments and business or political trends indicate that these may be of assistance to his employers.

Complaints

Under the heading of contacts should also be considered complaints. On the L.N.E. Railway, public complaints are dealt with by the commercial department concerned and, sometimes, by the Divisional General Managers or Chief General Manager. Complaints or criticisms appearing in the Press are handled by the Press Relations Officer, in consultation where necessary with the department concerned.

On the London Passenger Transport Board all complaints are handled by the Public Relations Department. Logically this would appear to be the ideal arrangement, for if public complaints do not come within the scope of public relations work I do not know what does. It can also be argued that commercial officers may feel that certain types of complaint reflect upon their efficiency and they may accordingly answer such criticisms rather sharply. An impartial public relations department, having a specialised section dealing exclusively with public complaints of all kinds, would undoubtedly be able to deal with such matters in a more impersonal manner, and from its very position as

the mouthpiece of the undertaking, invariably speak with one voice.

There are many who will agree that London Transport's method of dealing with public complaints is fundamentally sound, but argue that what is good for a compact, densely populated area such as London is unworkable for the widespread areas covered by the main line railways. My own view is that the greater the ramifications the more vital is the need to assess public opinion. If a commercial, operating or technical department can be successfully decentralised to work on a regional or divisional basis, why should not the public relations department function likewise?

The method of dealing with all public complaints as employed by London Transport is important because it not only interprets the Board to the public but the public to the Board, by scientific analysis and by other means. On the other hand, it should not be overlooked that apart from the customary methods used by the commercial departments of the railways to keep the managements informed of public opinion, the public relations departments of the railways also fulfil some of the functions of interpreting the public to the managements. For instance, besides the answering of complaints in the Press, to which reference has already been made, the L.N.E.R. Press Relations Office scrutinises the newspapers daily, and cuttings of interest to the various departments are extracted and circulated to the officers concerned at London headquarters and the three divisional headquarters, the latter being possible because of the regional organisation of the Press Relations Office. It also carefully assesses every day the favourable and unfavourable space secured by all four British railways in the National Press and a statement is submitted monthly to the management. And, in normal times, the Press Relations Officer compiles a comprehensive Annual Report on the work of his organisation for the information of the management.

Employee Relations

Relations between management and employees on the railways may be classified under two heads. First there are the relations governed by the National Agreements and it may fairly be claimed that the British machinery of negotiation between the railways and the railway trade unions is probably the most highly developed in the world. Secondly there are the relations that may be developed by mutual co-operation. It is in this second sphere that public relations has another tool, for the public relations scheme that does not take it into account can have little hope of being fully effective.

Ideally every man in a railway undertaking should feel that he is an integral part of it, and

this feeling can be fostered if he is told more of plans which may affect his work, or his department, or the work of the railway as a whole. If he knows the facts, he will not only be encouraged to play the part of local public relations officer amongst his own circle of friends, but be in a position to answer more effectively questions and criticisms that are often put to him about his railway.

One useful way in which information can be disseminated to the staff is by means of house magazines or news sheets. Many railways in different parts of the world produce quite attractive publications of this kind, the work sometimes being delegated to the public relations department. So far as I know they all appear monthly. From a news point of view this is most unsatisfactory, for it frequently means that the staff are told of developments on their railway some weeks after they may have seen references to them in their newspapers.

Publicity

Publicity is not altogether a satisfactory term for it is frequently confused with advertising and propaganda. Advertising, which is the sledge hammer of sales promotion, is a message in the form of a Press advertisement or poster or, in the U.S.A. for example, time on the radio, for any of which one pays. Propaganda, as I have already explained, is a planned attempt to promote a cause or doctrine and it employs both advertising and publicity for the purpose.

Broadly speaking, publicity covers "Information and Facilities." Its main outlets are, in order of importance, the editorial columns of the Press, the radio and the film companies, especially the newsreel companies. The secondary outlets, though nevertheless of considerable importance, include public visits, public requests for information and public speaking.

ORGANISATION

There is a sharp difference of opinion over the question whether the advertising and publicity branches in public relations work should be combined in one department or each put in the charge of separate officers. But whichever course is adopted, it is now generally agreed, at any rate so far as railways are concerned, that the officer or officers in charge must be directly responsible to, have easy access to and enjoy the complete confidence of the management.

In this connexion it is worth recalling that the first British railway publicity department, which was set up in the early 1900's by the Great Central, was attached to the office of the General Manager. It is true that it dealt mainly with advertising matters, but in the general principle the Great Central demonstrated that it was years ahead of some of the other railways.

My own view, based upon a close study of the subject and 16 years experience in one form of public relations work or another, is that the separated type of organisation is unquestionably the best for the following reasons. First, although advertising and publicity meet at several points and sometimes are interwoven, they represent two fundamentally distinct functions, advertising being primarily concerned with sales promotion and publicity with public relations. Therefore, secondly, they each should have their own specialist personnel and organisation to suit the different needs of each. Thirdly, the newspapers themselves make a clear division between the advertisement and editorial sides of their business. And fourthly, most important of all, the Press have a remarkable, and laudable, ability for recognising advertising dressed up as news. That alone is, to my mind, sufficient to justify keeping the two functions independent of each other.

PERSONNEL

As to Public Relations Officers themselves, you may have read, at one time or another, what some newspapers sometimes think of P.R.O.'s in general and, in particular, of those who have had no journalistic training. The fact is often overlooked that when a journalist does become a P.R.O., dog occasionally eats dog.

The main causes for criticism arise, I think,

from defects in public relations methods and technique, rather than from the public relations system itself. A journalistic training is an excellent qualification for a P.R.O. but not necessarily for one who has to handle railway public relations. A railwayman who shows a flair for the work will, I am convinced, learn to understand newspaper problems and requirements far more quickly than the journalist P.R.O. will master the complex organisation, diverse activities and ramifications, and highly technical features of a modern railway.

Furthermore, if a railway public relations officer is to attain any success, he must possess the confidence and respect of his fellow officers. The results he is able to obtain largely stand or fall by the co-operation and assistance he receives from the other departments of the line he serves. Therefore he must thoroughly understand their functions and work and this in turn calls for a practical grasp of the principles of railway operation and some understanding of technical problems and development. A railway Public Relations Officer should neither dominate nor be dominated. He is a member of a highly organised team. His task is to interpret the work of that team to the public, not to put across his own personality. And when a good public relations job has been accomplished it is for him to say to his colleagues "Thanks to you, we've done it."

FUTURE DEVELOPMENTS IN AIR TRANSPORT

By F. N. HILLIER, Publicity Controller, British Overseas Airways Corporation

*Summary of address to the Midland Section at Birmingham on November 4th 1947.
In the Chair, C. J. Hurst, O.B.E., M.Inst.T.*

We have just been through a period of several years when the aeroplane, under the necessities of war, was subject to intensive—and in many respects, so far as commercial use is concerned, uneconomic—development. This was because developments which it was necessary to seek in weight, speed and range were, in time of war, pushed forward regardless of cost, not of the cost of the aeroplane itself but the cost of using it. Had these characteristics been sought for civil purposes, their development would have been governed to a much larger extent by such considerations as economy in operation and maintenance, and above all safety, factors which for purposes of purely military aviation, in time of war, were of secondary importance. But it was inevitable that, great developments in size, speed and range having been achieved, both manufacturers and operators should wish to utilise them in the construction and operation of aircraft for civil air transport purposes. Since the airline operator, certainly in this country,

places safety as the primary requisite of civil air transport, one of his principal problems must be the embodiment in future aircraft of characteristics which will guarantee the highest possible degree of safety in operation. In the flight of an aircraft there are two especially important periods, the take-off and the landing, particularly under adverse weather conditions. Our problem, therefore, in this particular aspect of aviation is to ensure that the take-off and landing of a passenger aeroplane can be achieved with no more tension or adventure than the departure and arrival of a railway train or a steamship. The risks of accident at these two critical periods of an aircraft's flight can be minimised by various devices, and can also be lessened by an extremely high standard of training of aircrews. The element of risk at present is not altogether confined to take-off and landing, but wherever it might occur the most urgent problem of the airline operator is the elimination of the element of risk in flying, even if for a time it prevented

the maximum utilisation of speed or of fastest possible schedules.

One future development of particular interest is that of the size of aircraft. Transport aircraft currently in use range from about 25,000 to 90,000 lb. all-up-weight, with the great majority in the lower ranges up to 70,000 lb. Next year, aircraft of about 135,000 lb. all-up-weight will be in service on the Atlantic, but for some time past it has been possible to envisage the use of aircraft of at least three times the size of the largest in operation to-day.

Great size in itself is always an attraction, there is also involved the question of prestige, as for ships. It would seem, therefore, to be only natural that the weight of aircraft should go on increasing for some time. It must be obvious, however, that practical considerations will set certain limits and, apart from structural questions, the main consideration would seem to be what is the largest size that can be economically operated commercially. In connexion with the development of very large aircraft the question of first cost constituted a question of some moment. We appeared to be approaching the point—much earlier than it had been reached for ships—where the cost of aircraft might be such that the operator could not afford to bear it, and the question arose how would the very high capital cost of large aircraft be apportioned. After considering the arguments both for and against very large aircraft the resulting picture contained many uncertainties, with a background of experiment. It was of interest to note the difference in this respect between the position of a shipowner ordering a new ship and the airline operator in regard to a new aircraft. The shipowner knows within narrow limits exactly what he will get in terms of performance and operating costs, the airline operator is seldom so happily situated. It is easy to make confident predictions, and such predictions are perhaps too often made, in regard to commercial aviation. They were seldom heard from operators who were business men. It was not only in regard to size that the element of experiment was strong; new propulsion methods are still in an early stage of development. How soon the gas turbine or the pure jet might supplant the piston engine in commercial aircraft is a matter of speculation. The operator is naturally eager to take advantage of any improvements, but finds it difficult to commit himself to putting into service a new type of development until he has reasonably accurate data and the assurance that performance can be maintained, and that services will not be interrupted by mechanical troubles.

On the commercial side of airline operation one of the principal problems is the evolution of a coherent and economically sound structure of passenger and cargo rates. Among other

questions is that of how cost per capacity ton-mile should be distributed over the various types of load to be found in an aircraft, that is to say passenger baggage, mails and cargo, and over these loads on various routes and lengths of journeys. One difficulty is that at this early stage of development of air routes, under post-war conditions, sufficient data is not yet available on which it is possible to assess traffic potentials with accuracy, and until more accurate data are available it is difficult to determine what load factors should be aimed at. The spread of costs depends on ascertainment of what a passenger seat-mile costs relative to a cargo ton-mile. Among various complications surrounding these questions is that, while some aircraft have a great deal of cargo capacity, others have much less in relation to passenger load, and, operating on different routes, they might have widely differing payloads depending on the speed of the schedule, altitude of aerodromes, length of stages, fuel reserve and other factors. The present basis of freight rates, a more or less arbitrary one inherited from the past, is generally to reckon the cost per kilo. of cargo at about 1/200th of the corresponding passenger fare, this being a survival from the pre-war period when a passenger and his free baggage plus an approximate share of the weight of passenger necessities amounted to about 200 kilos. The tendency for the future is to separate passenger fares from freight rates and to give the latter an independent status. Another development is the purely cargo aircraft, but this does not rule out the idea of the mixed aircraft. There is a school of thought which favours special rates for cargo booked for scheduled services, with a lower rate for freight carried on a fill-up load basis. Cargo space might vary considerably from voyage to voyage, and thus there would be space available for a varying amount of shipside or fill-up load. Another approach to the question is the fixing of a standard basic rate for air freight, together with a limited range of special commodity rates applied to certain classes of goods which could bear a higher rate for high speed.

In nearly all matters appertaining to air transport there is one common factor, which is the difficulty of assessing the rate and character of progress. It is perhaps true that in few fields of human endeavour is prophecy so attractive as in regard to aviation, and in regard to which it is so unsafe. Airline operation is founded on a series of variables, most of which interact on each other. Probably only by trying to earn a profit by operating aircraft year in and year out is it possible fully to understand the intricacy of a business so complex and having so many elements in such delicate relation one with another.

MECHANISATION OF CARGO OPERATIONS AT PORTS

By F. H. CAVE, M.Inst.T., Deputy General Manager and Secretary, Mersey Docks and Harbour Board

Paper read before the Western Section at Bristol on September 26th 1947.

In the Chair, F. D. Arney, M.Inst.T.

A well known advertisement tells us "Not too little ; not too much ; but just right."

Here in a nutshell we have the problem of the mechanisation of cargo operations and it is a problem which has no one answer. The extent to which mechanisation is possible and desirable must depend upon many factors which differ in each country and in each port, even on each quay. The purpose of this paper is not, therefore, to instruct in the type or quantity of mechanical appliances which should be used on a particular quay but rather to examine the development of the chief of these methods ; to sketch the uses now made of them ; to try to estimate their value ; and, with great diffidence, to hazard a guess as to their future trend. The extent to which it is desirable to mechanise any particular dock work is a matter which must be left to the balanced judgment of each port authority and operator. It should be clearly understood that this paper deals solely with the mechanisation of the handling of *general* cargoes and does not attempt to examine the effect of the very highly efficient appliances provided for specialised cargoes such as grain, ores and many other commodities.

It is generally considered that the mechanical age, as we call it, started with the realisation by Watt of the potentialities of steam, and steam winches were the first mechanical appliances to be used for cargo handling. There was then a long pause. Casual labour at the ports was cheap and plentiful. It could keep goods moving approximately as fast as the ship's derricks could work. All was well with the world.

The first move in the mechanisation of dock facilities, as distinct from ships' gear, was also directly related to discharging and loading operations. On this side of the Atlantic, quayside cranes were introduced ; in America, the cargo hoist system was invented. It is perhaps permissible to think that in those days the close interconnexion of the speed of working ships with the speed of handling the goods on the docks was not fully appreciated ; but casual labour on the quays was still in the main able to cope with the amount of mechanisation which had developed prior to the first World War.

There are many phases of mechanisation in industry which have received an immense impulse from the impact of the two world wars. Transport in all its forms, including

dock work, is one of them. Speed in every operation became vital, cost becoming a secondary consideration. The manpower of the nations was drained and machines had to be invented or improved to supplement it. Small portable (but not self-propelling) cranes had become almost a commonplace on the docks by 1918. Dock operators began to realise that mechanical appliances might pay a dividend and in the years between the wars there was a tremendous increase in the number of appliances which came into common use on the dock quays. The portable cranes became self-propelling. Improvements in design increased their usefulness tenfold and diesel engines began to come into the picture.

In addition to cranes, whose main function was to lift and lower goods, that is to say to move them in the vertical plane, mechanical trucks, both electric and petrol driven, were widely developed to move them on the horizontal plane. It was only a question of time before an appliance was developed which would combine these two movements in the one machine ; and on the outbreak of the second world war we in this country were experimenting with new types of mobile cranes and, somewhat tentatively, with larger mechanical trucks with a light crane mounted on the platform, whilst in America the fork lift, or chisel truck, had begun to emerge.

The second world war gave a further and tremendous impetus to all these developments. Economy in the use of manpower became increasingly important, and financial economy was once more of secondary consideration. The speedy turn-round of ships carrying cargoes quite abnormal to peace-time needs became a matter of vital necessity for the national survival of all those countries involved in the war. It is probably true to say that the Liverpool docks increased their mechanical quay equipment by close on 1,000 per cent during the war years and this is equally true of most great ports both on this and the other side of the Atlantic. The mechanisation of cargo operations at ports certainly came into its own, though it did not alter radically in design, and there are those who say, and not without some justification, that mechanisation became unbalanced and uneconomical.

It is well to review the position to see whether we may perhaps have gone too far in too short a space of time and without a proper realisation

of the consequences of such rapid development. Before doing so it will be worth while to examine one or two of the principal methods of mechanisation in use to-day and the probable trend of future investigation and policy.

METHODS

There is nothing very new in the developments which have taken place in this country for the transfer of goods between ship and shore. Over here we have kept to the old idea of quayside cranes, generally of the luffing and slewing variety, and although we have increased their number, speed and lifting capacity, there has been no radical change in type during the past 20 years. The real point of interest in regard to this part of mechanisation lies in the difference in practice between European ports where discharging and loading cranes are normally provided, and American ports where such provision is an exception even at recently constructed berths.

American ports expect ships to discharge and load with their own gear and in the majority of cases port equipment does no more than to assist the ship by the provision of cargo hoists or Burton Falls. These consist of girders suspended high above the quay to which blocks are attached so that the quay fall lands the goods at the shed door. Portable winches are installed in the sheds to work the quay fall, thus augmenting the ship's gear. Several port officials and working stevedores who have recently visited America have been extremely impressed by the economy and simplicity of this method. The initial cost is small compared with the provision of high capacity cranes; working parts which are likely to involve high maintenance costs are reduced to an absolute minimum; and if the ship's gear is in good working order the operation is as speedy and efficient as can be produced in practice by ordinary cranes. Many leading American stevedores seriously argue that cargo hoists actually provide a more efficient method of discharge and loading than do cranes, provided that the quay margin is not more than 40 feet wide, and they maintain that the only theoretical advantage of a crane is that it will slew, which they say is in any case a waste of time since the object to be achieved in the transfer of cargo between ship and quay is to move the goods by the quickest, and therefore the shortest route, which automatically eliminates slewing. There is a strong case to be made for the use of cargo hoists at berths which have a margin of not more than about 15 feet between ship and shed, and it is suggested that this method, which has been in operation in America for many years, should be given a serious trial in this country as soon as the supply of steel will permit.

It is, however, in the realm of mechanical appliances for use on the quays themselves that the greatest advance has been made in recent years. We quickly developed from the transportable to the self-propelling mobile crane and from the somewhat rudimentary mechanical trucks of 25 years ago to the extremely efficient and economical electric and petrol trucks which are used in large numbers to-day. By far the most important advance, however, has been from the separate dimensional movements of cranes and trucks to machines with a dual movement, culminating in the fork lift or chisel truck now universally used in America.

The advantages of mobile cranes and mechanical trucks are apparent and well known and it is unnecessary to deal with them in detail. It is imperative, however, to devote a few minutes to a discussion of the chisel truck, which has taken American operators by storm and is probably the greatest phenomenon of the present day in the mechanical handling of cargo and in its potentialities for the future. They are readily adaptable for moving a very wide range of cargo, but their special and most important application is for use with the pallet system. The underlying idea of this system is quite simple, viz.:—that the goods at their first handling on the ship or on the quay should be placed on trays or pallets which can be used both as ship's slings and for piling on the quay, thus avoiding any intermediate handling of individual packages between the vehicle which brings them to the quay and stowage in the hold or vice versa. The pallets themselves consist of wooden or metal trays about 4 ft. by 6 ft. with a double bottom, the two bottoms being separated by three or four spaced cross pieces about 4 or 5 inches in height. Export cargo on arrival on the quay is stowed straight on to these trays, care being taken to make the top of the packages quite level. The pallets are then removed by fork lift trucks, the prongs of which are inserted between the double bottom. They are taken to the proper stowing ground and piled one on top of the other. The only limits to the height to which they can be piled are firstly the height to which the fork lift truck can raise them (say, 12 to 14 feet), and secondly the limit to which the lower pallet loads can withstand the weight of those stowed on top of them. When the ship is ready to load the goods, the fork lift truck again runs to the pile, removes the already-stowed pallets one by one and places them on trailers for a tractor to draw to the quay edge. On arrival at the quayside each pallet is attached to the ship's fall by means of two steel bars which fit into the ends of the pallets between the double bottoms, distance pieces or stretchers being fitted at an appropriate height to prevent the goods being damaged by the connecting

ropes. They are slung in this way into the hold where the cargo is man-handled in stowing for the first time since it was placed upon the pallets.

Precisely the same operation in the reverse direction is carried out on goods of import cargoes. A useful development of this system is the increasing practice of making large cases complete with double bottom so that they can be dealt with in exactly the same way as ordinary palletised goods.

This system of handling cargo is almost universally used in America but they are not content to confine its use simply to work on the quays. A great deal of investigation is at present taking place into the possibility of palletising goods before they leave the factory so that they may be carried to the port already stowed in the way in which they will subsequently be delivered to the ships. This clearly involves a tremendous organisation with very wide interchangeability of pallets between the different haulage firms and even between factories, but the system has such a hold on the American mind that these difficulties will very likely be overcome. It is not only at the factory end that the Americans are experimenting. They have taken on the very much more difficult task of evolving a system for stowing the pallets complete with their loads in the holds of the ships. A somewhat inconclusive experiment in this direction was tried by the American Naval Stores Department during the war and now a commercial start has been made by the Canada Steamship Lines, Ltd., which is building large ships for use on the Great Lakes with specially designed holds served by side ports and lifts so that fork lift trucks or trailers with their pallets can run straight into the ship from the quay and deposit the loaded pallets in their final stowage.

Many years must elapse before such a perfection of the system can be applied to normal freighters on deep sea voyages and many will doubt whether such a system can ever be generally developed, although it may be found to have great advantages for certain specialised trades. It is, however, a marvellous target at which to aim and the greatest credit is due to those who have refused to be discouraged by the many difficulties which they have experienced and the tremendous organisation which they have had to build up. To take an example of a commodity ideally suited for palletisation such as canned goods in cartons, it is estimated that, from the first handling after the goods leave the shipper's delivery truck until they are stowed in the hold, the total separate handlings involved in dealing with 70 cartons have been reduced from 210 to 3. Such extraordinary simplification may well stir the American (and our) imagination.

In spite of these tremendous manifest advantages there are many on this side of the world who doubt the possibility of a wide extension of the use of the pallet system under present conditions. It is argued with great justification that this system is essentially a warehouse system for use with particular types of goods in sound packages of regular size and that it cannot be applied satisfactorily and economically to the very wide range of small parcels of different marks which make up the average general cargo passing to and from this country. It is also said that it can only be economical if the size of the gangs employed on the quay can be reduced, not only by the elimination of trucking but also of selecting, weighing, etc., i.e. unless one can mechanise completely, it is not worth while using the pallet system. It is highly probable that in present circumstances there is only a very limited use for this system in handling general cargoes on the quays in this country, but it is a system that holds out such tremendous possibilities that it will be well worth while to spend time, money and imagination in attempting its development and to go to a very great deal of trouble in the effort to eliminate the commercial and industrial restrictions which may at the present time reduce the advantages to be gained from it.

PROGRESS IN AMERICA

We have a great deal to learn from the Americans in the keenness with which they now investigate and experiment with various mechanical devices both for port work and ancillary services. Until the war we were well ahead of them in dock mechanisation and, with the possible exception of the chisel truck, depending on one's individual views of its usefulness for our types of traffic, we still are. But unless we deal with mechanisation of cargo working in a more scientific and co-ordinated manner they will leave us badly behind. Apart from a Committee which is handling the development of the pallet system they also have a National Commission to investigate and advise upon the design and equipment of ports. I had the pleasure of meeting the Chairman of this Commission who is a working stevedore on a very big scale and a man of most open and agile mind. I well remember discussing for two or three hours with him the problem of mechanising the stowing and unstowing of ships. He held very strongly, and without doubt rightly, that until new methods of mechanisation can be more widely introduced on board the ship there is a very definite limit to the amount of mechanisation which it is possible economically to introduce on the dock quays and sheds. He maintained that stevedores are doing their part

well and that the next move lies with the naval architects. A moment's consideration must produce the conviction that this is so, since it is futile to provide appliances which can deal with goods to or from a ship at a speed of say 50 tons or more per gang hour when the men in the hold still have to do their work by purely manual labour and stow or unstow the cargo at perhaps a quarter of this rate. In any system of industrial mechanisation a bottleneck such as this will upset the economic apple cart. It is good to know that the Americans are giving serious consideration to the problem which is a very difficult one indeed and one which does not seem to be receiving sufficient attention in this country.

ECONOMICS

What are the advantages which have so far been obtained by mechanisation of cargo handling and have these advantages been worth the cost?

On looking back at the history of industrial mechanisation it seems clear that all development has resulted from the achievement of two closely related objectives. 1. The decrease in man hours per unit of production. 2. The consequent cheapening of output. To these should rightly be added in these more humane times—3. The avoidance of undue physical strain on the workers. Taking these three standards as a guide, what has been achieved?

With very great regret it must be admitted that the introduction of mechanical appliances on dock quays has failed to produce either of the first two objectives. Exceptions can be claimed in respect of certain of the work (delivery of goods to inland transport for example) but the speed of the overall operations which directly control the loading and discharging of ships has actually decreased since quay mechanisation became a general practice. The output per gang hour may have risen slightly during the increase in mechanisation between the wars, but dropped heavily during the war period when mechanical appliances were multiplied many fold. There has been no apparent tendency for output to increase since the war and as the manning scale of the gangs has not been generally reduced it must be admitted that the cost per ton has increased instead of decreased. The third objective may be said to have been achieved.

It must not be thought that this experience is confined to this country. America, which really only started mechanisation on a big scale during the war, experienced a similar percentage drop in output and, although it is said that this is now improving, it is still well below pre-war (and non-mechanised) level. In other countries, too, the same position obtains.

To examine all the causes for this disappointing situation is quite outside the scope of this paper, but it is necessary to face the facts and to see where and how improvement can be effected.

Whilst it would be economically unsound, and therefore in the long run of no good to anybody, to try to pretend that mechanisation can be on a right basis if it does not increase output, if costs to the shipowner, the operator and the importer are increased, and if it benefits the worker alone, so it would be equally wrong to jump to the conclusion that the benefits to the worker were undesirable or even unnecessary. A great part of the trouble must be in the policy which led to intensive mechanisation of part of a continuous process whilst part—namely, the work in the ship's hold—remained unmechanised. In addition to the inevitable slowing down of potential output by this bottleneck it is probable that such a bottleneck has a very adverse effect on the moral of the workers.

It is quite impossible to unmechanise even though we may possibly be over-mechanised in certain respects at the moment. It must be remembered that mechanisation of cargo operations is of quite recent growth and needs time to settle down, and so does the new dock labour scheme. Far greater troubles have faced other industries when they introduced mechanical appliances, and with good will and patience the dock industry also will get over its troubles, if it faces up to them. There are many restrictive practices, not only industrial but also commercial, to be broken down. A new spirit of interdependence and team work needs to be built up. Mechanisation needs to be developed on more co-ordinated lines of well balanced policy; and once again be it emphasised that the bottleneck of the work in the hold urgently needs the closest investigation and inventiveness by shipowners and dock operators alike.

W (Continued from page 631).

and Visit of President. The President replied to the toast "The Institute of Transport", proposed by Sir Gilmour Jenkins, K.C.B., K.B.E., M.C., Secretary, Ministry of Transport. The toast "Our Guests" was proposed by the Chairman, Major F. S. Eastwood,

M.Inst.T., and Mr. G. H. Kitson, O.B.E., replied for the guests.

Jan. 15—Birmingham Graduate and Student Society. "The function and organisation of an industrial transport department" by D. G. I. MacDonald (Graduate).

Notices of later meetings are unavoidably held over.

GENERAL RECORD OF MEETINGS

Papers not yet published may appear in later issues of the Journal.

- Dec. 4—Newcastle Graduate and Student Society. "The law relating to the carriage of traffic by rail" by P. J. Turner (Graduate).
- Dec. 5—Western Section. Transport Quiz.
- Dec. 8—London. Henry Spurrier Memorial Lecture. "The road transport industry and the future" by H. T. Dutfield, *M.Inst.T.*
- Dec. 9—Northern Ireland Section. "The control of road traffic and its relationship to accident prevention" by N. H. Sweny, *Assoc.Inst.T.*
- Dec. 9—Yorkshire Section. "Development in the bus industry" by C. F. Klapper, *A.M.Inst.T.*
- Dec. 10—Southern Section. "The selecting of vehicles for a road transport undertaking" by W. Street, *A.M.Inst.T.*
- Dec. 11—East Midlands Section. "Tyres—their manufacture and performance" by A. F. Simpkins, Dunlop Rubber Co., Ltd.
- Dec. 11—Edinburgh Discussion Group. "The principles of railway signalling." Opener: J. Pollard.
- Dec. 11—Portsmouth Discussion Group. "Revenue accounting and statistics in a road passenger transport undertaking" by D. Racher (Graduate).
- Dec. 11—New South Wales Centre. Address by A. Macbeth, Director and General Manager, Guest, Keen & Nettlefold, Ltd.
- Dec. 12—North Staffordshire Group. "Indivisible loads and their ancillary work" by E. Bulgin, *A.M.Inst.T.*
- Dec. 12—Northern Section. "The organisation and operation of the traffic and communications branch of a county police force" by Colonel T. E. St. Johnston, *O.B.E.*, Chief Constable, Durham County Constabulary.
- Dec. 15—Sussex Group. "Question night".
- Dec. 16—Metropolitan Graduate and Student Society. "The Road and Rail Traffic Act, 1933—some experiences of traffic licensing courts" by C. W. Herbert (Graduate).
- Dec. 16—Hull Centre. "Some post-war difficulties in civil air transport" by F. M. Sheldon, Foreign Editor, British European Airways.
- Dec. 18—London. Annual General Meeting.
- Dec. 18—Birmingham Graduate and Student Society. "Some random thoughts on road transport" by G. T. Wood (Student).
- Dec. 18—North Western Section. "Heavy road transport and erection of machinery" by N. E. Box, *M.Inst.T.*
- Dec. 18—Cardiff-Newport Graduate and Student Society. "Guest night".
- Dec. 19—Bristol Graduate and Student Society. "Railway signalling" by H. L. Elmer, assisted by G. W. Piper.
- Dec. 19—Nottingham Graduate and Student Society. "Destination and route indication in passenger transport" by K. H. Wellman (Student).
- Jan. 1—South Wales and Monmouthshire Section. Luncheon meeting.
- Jan. 1—South Western Section. "Brains trust."
- Jan. 2—Western Section. "The Transport Act" by T. D. Corpe, *O.B.E.*, Solicitor, Bristol Tramways and Carriage Co., Ltd.
- Jan. 2—Leeds Graduate and Student Society. Annual Re-union.
- Jan. 5—Metropolitan Section. "Traffic problems of a large retail distributor" by Col. H. I. Davidson, *M.B.E.*, *A.M.Inst.T.*
- Jan. 6—Midland Section. "The road transport industry and the future" by H. T. Dutfield, *M.Inst.T.*
- Jan. 6—Northern Ireland Section. "The technique of large-scale distribution" by W. A. Winson, *M.Inst.T.*
- Jan. 6—Bournemouth-Poole Discussion Group. "Time tables" by C. N. Anderson, *M.Inst.T.*
- Jan. 8—East Midlands Section. Informal account of visits to Belgium and Switzerland by B. England, *M.Inst.T.*
- Jan. 8—Newcastle Graduate and Student Society. "The law relating to the carriage of traffic by road" by P. S. Turner (Graduate).
- Jan. 8—Portsmouth Discussion Group. "Traffic schedule operation and time table compilation in road passenger transport" by F. Sellwood, *A.M.Inst.T.*
- Jan. 9—Northern Section. "Road safety—a recent report" by W. H. Gaunt, *C.B.E.*, *M.Inst.T.* At this meeting presentations were made to A. R. Polson, *M.Inst.T.*, and E. Sandells, *A.M.Inst.T.*, on resigning the offices, respectively, of Hon. Secretary and Assistant Hon. Secretary of the Section.
- Jan. 10—Metropolitan Graduate and Student Society. Inspection of the London Transport bus garage and trolleybus depot at Holloway.
- Jan. 13—Metropolitan Graduate and Student Society. "The movement of services personnel within the U.K. in war-time" by A. F. Wallis (Graduate).
- Jan. 14—Southern Section. "Railway signalling—an unexpected development" by C. N. Anderson, *M.Inst.T.*
- Jan. 14—Yorkshire Section. Annual Dinner

(Continued on page 630).

ELECTIONS TO MEMBERSHIP

WITH EFFECT FROM NOVEMBER 18TH 1947

Students

ASHWORTH, HAROLD. H. Ashworth.
 BIRCHALL, EDWARD. British Railways.
 BROCK, JOHN HERBERT. British Railways.
 CHAMBERS, WALTER WILLIAM. Samuel Jones & Co., Ltd.
 COOPER, THOMAS LOOS. Keith & Boyle (London), Ltd.
 CRITCHLEY, FRED. Preston Corporation Transport.
 FRANCIS, NORMAN CYRIL. Schwéppes, Ltd.
 JONES, JOHN IORWERTH. Crosville Motor Services, Ltd.
 LOGAN, THOMAS JOHN. British Railways.
 LOWE, CHARLES ARTHUR. British Railways.
 MCCARTHY, JOHN ALBERT. British Railways.
 MILNER, RICHARD. Skill's Motor Coaches.
 MORSE, WILLIAM CHARLES. Ascot Gas Water Heaters, Ltd.
 OLIPHANT, JAMES STANLEY. British Railways.
 PHIPPEN, REGINALD WILLIAM. Frames' Tours, Ltd.
 POTTER, KENNETH. John Smith's Brewery Co., Ltd.
 SACKETT, MAURICE WILLIAM.
 SOPWITH, JOHN WILLIAM. British Railways.
 STEELE, ROBERT IRVINE. W. G. Goddard & Son.
 WAITE, ARNOLD. Huddersfield Corporation Transport.
 WALKER, ARCHIBALD McDONALD. Glasgow Corporation Transport.
 WATERFIELD, RONALD. British Railways.
 WEBB, HERBERT REUBEN, B.E.M. British Waterways.
 WOOLLEY, PERCY JAMES. Leeming Brothers, Ltd.

WITH EFFECT FROM NOVEMBER 25TH 1947

Students

BAIRD, WILLIAM GORDON GLEN.
 BALA SUBRAMANIAN, PERUMARAM NARAYANAN. Directorate of Civil Aviation, India.
 BEDFORD, ALAN CHARLES. Thomas Tilling, Ltd.
 CANNON, RUSSELL EDWARD. British Railways.
 COLE, PHOEBUS RAYNER. Central African Airways.
 CONCHIE, BRUCE ROBERT. Downer & Co., Ltd.
 ELLIOT, JOHN DARLING. British Railways.
 FOOT, HENRY RICHARD. Bournemouth Corporation Transport.
 GALLAGHER, JOHN ALEX. Glasgow Corporation Transport.
 HORNBY, CYRIL ALWYN. The Brightside & Carbrook Co-operative Society, Ltd.
 JONES, STANLEY. British Railways.
 KING, EDGAR CHARLES. British Railways.
 LOBB, WILLIAM. British Railways.
 LORD, CYRIL EDWARD. Hull Corporation Transport.
 MALIN, JAMES ROBERT. Department of Customs and Excise, South Africa.
 MARSH, JAMES ALEXANDER. Leigh Corporation Transport.
 MULLEN, JOHN STEPHEN. Leicester City Transport.
 NEWMAN, WILLIAM JOHN ARTHUR. British Railways.
 PALMER, ANTHONY LEONARD. Wallasey Corporation Transport.
 OWEN, THOMAS LESLIE. Sangwin, Ltd.
 PARR, GEORGE. British Railways.
 PASSEY, WILLIAM JOHN. British Railways.

PETTIPHER, FREDERICK HAROLD.
 ROBERTSON, JOHN HURRELL.
 SHANN, GEOFFREY NEWSAM. British Railways.
 TAYLOR, FREDERICK. Blackwell's Metallurgical Works, Ltd.
 VAN DER WALT, PAULUS JACOBUS. Department of Customs and Excise, South Africa.
 WASILEWSKI, MIECZYSLAW.
 WILSON, HERBERT ALFRED. British Railways.
 WILSON, RONALD ARTHUR ROBERT. British Waterways.
 WRIGHT, OSWALD FAIRGRIEVE. Cowan & Co.

WITH EFFECT FROM DECEMBER 2ND 1947

Students

BETLEM, HENDRIK PIETER BARTHOLOMEW. British Railways.
 BRERETON, JAMES. Manchester Corporation Transport.
 BUCK, WILFRED MORTIMER. British Railways.
 COE, ARCHIE MARSDEN. British Railways.
 DUNN, GEORGE HUTTON. British Railways.
 ELLIS, FREDERICK REGINALD JOHN. British Railways.
 FLUCK, EDWARD JOHN. Immediate Transportation Co., Ltd.
 KIRKHAM, ROBERT. British Railways.
 JOHNSON, DESMOND OLSEN. New South Wales Government Railways.
 KITHULAGODA, LEANAGE RICHARD. Ceylon Government Railway.
 CRAIG, DONALD MCINTYRE.
 MATTHEWS, GEORGE EDWARD. British Railways.
 PARKER, GEOFFREY FRANCIS WINDSOR. British Overseas Airways.
 PATERSON, JOSEPH EDGAR STUART. British Railways.
 PRIOR, EDWARD ARTHUR. Rhodesia Railways.
 ROURKE, FRANCIS DENNIS. Metropolitan-Vickers Electrical Co., Ltd.
 SATHANANDAN, KATHIRAVELU. Ceylon Government Railway.
 SELBY-LOWNDES, EDWARD DOUGLAS WILLIAM. Edmundsons' Electricity Corporation, Ltd.
 SMART, ROBERT RAE. Hull Corporation Transport.
 THANGARASA, RATNASAMY. Ceylon Government Railway.
 TIPPER, ARTHUR JOHN. British Railways.
 TOVEY, RICHARD REGINALD. British Railways.
 WATNOUGH, GEORGE STANLEY. British Railways.

WITH EFFECT FROM DECEMBER 9TH 1947

Students

ALLAN, DAVID NEILL. Donaldson Line, Ltd.
 CHAMBERS, CHRISTOPHER MICHAEL. United Automobile Services, Ltd.
 CLEWS, JAMES. United Automobile Services, Ltd.
 FAIRLIE, JAMES WALLACE. British Railways.
 GARLAND, WILLIAM JOHN. Crossfields & Calthrop.
 GIBBINS, RONALD HOWARD. Northampton Corporation Transport.
 GILL, JOHN ALEXANDER. Mersey Docks and Harbour Board.
 HARGREAVES, ALAN. Pickfords, Ltd.

HUGHES, JAMES HENRY. Liverpool Corporation Transport.
 IRVING, ANDREW AIRD. British European Airways.
 JEFFERSON, MILES. Rowntree & Co., Ltd.
 LECKIE, KENNETH WILLIAM STUART. Cunard White Star, Ltd.
 LOVERING, RONALD SYDNEY. British Railways.
 LUSCOMBE, HAROLD VICTOR. British Railways.
 MORRIS, FRANK GEORGE. British Railways.
 NICHOLSON, OSMOND. Ribble Motor Services, Ltd.
 OLD, JOHN RAYMOND. Cargo Fleet Iron Co., Ltd.
 OXTON, CLYDE. Dunlop Rubber Co., Ltd.
 PERCIVAL, JOHN. British Railways.
 PHILLIPS, MICHAEL STADON. Thomas Tilling, Ltd.
 QUINN, LESLIE THORNTON. British Railways.
 RIDLEY, WILLIAM PERCIVAL.
 ROBINSON, FREDERICK CHARLES. Motor Carriers (Liverpool), Ltd.
 SANDLAND, CHARLES BERTRAM. Wallasey Corporation.
 SINDEN, WILLIAM MALCOLM. United Counties Omnibus Co., Ltd.
 TAIT, JAMES HOPE LAMB. Glasgow Corporation Transport.
 WELLER, FREDERICK. General Electric Co., Ltd.

WITH EFFECT FROM DECEMBER 16TH 1947

Students

ANDOW, ERIC. British Railways.
 CAMBRIDGE, JAMES. British Railways.
 CLARK, ALFRED. British Railways.
 FISHER, ANTHONY ROY. British Railways.
 GARRATT, CHARLES PETER. British Railways.
 GOODFELLOW, WILLIAM. British Railways.
 GUESS, EDGAR GEORGE. Southdown Motor Services, Ltd.
 HANCOCK, HERBERT JAMES. Coventry Corporation Transport.
 HOLDEN, NORMAN. Joseph Crosfield & Sons, Ltd.
 JOHNSON, PETER BARNABAS. British Railways.
 LAIRD, COLIN ROBERT. Birkenhead Corporation Transport.
 MACBRADLEY, LENNOX LAUDER. British Railways.
 MCINTYRE, IVAN MORISON. British Railways.
 McNEIL, ARCHIBALD WILKINSON. Glasgow Corporation Transport.
 MORRIS, JAMES HENRY. Nigerian Railway.
 NAGLE, TIMOTHY. Coras Iompair Eireann.
 PARTINGTON, JAMES ALBERT. British Railways.
 ROBERT, LIYANAWADUGE. Ceylon Government Railway.
 ROBERTS, JOHN. British Railways.
 ROGERS, LAWSON. Birmingham & Midland Motor Omnibus Co., Ltd.
 ROWSON, CHARLES LEONARD. Enterprise (Scunthorpe) Passenger Services, Ltd.
 SCOTTON, JOHN RICHARD. British Railways.
 SHIPPOTOM, ERNEST. Bolton Corporation Transport.
 SMITH, CHARLES DAVID. British Railways.
 SMITH, STANLEY GEORGE ROBERT. British Railways.
 SYM, ALEXANDER. Glasgow Corporation Transport.
 WHITE, ARTHUR JAMES. British Railways.
 WOOD, ROGER SYDNEY. Wallasey Corporation Transport.
 WORMAL, ROGER PHETHEAN MACDONALD. British Railways.

WITH EFFECT FROM DECEMBER 23RD 1947

Students

BAILEY, RONALD GEORGE. British Railways.
 BOTHAM, LESLIE. G. H. Corker's Depositories, Ltd.
 BOYES, JACK. Doncaster Corporation Transport.
 CARTER, CYRIL NICKLIN. British Railways.
 DAVIS, KENNETH ALEXANDER ROSS. Yorkshire Woollen District Transport Co., Ltd.
 FISHER, WILLIAM. The London Scottish Lines, Ltd.
 FLEESON, JOSEPH. British Railways.
 FRASER, HARRY MURRAY. Southampton Harbour Board.
 GRAHAM, DONALD EDWARD. Baddeley Bros., Ltd.
 HOBDAV, CHARLES GORDON. British Railways.
 JOHNSON, ARTHUR RICHARD. Luton Corporation Transport.
 LIVESLEY, JAMES STEWART. British Railways.
 MARLOW, ERNEST EDWARD. London Transport.
 NORLAND, CHARLES ERIC. British Railways.
 PEART, RENWICK. Northern General Transport Co., Ltd.
 PHILLIPS, ALAN GEOFFREY. British Railways.
 SMITH, KENNETH. Derby Corporation Transport.
 TEAGLE, HERBERT FRANCIS. British Railways.
 WELCH, DOUGLAS ERIC. Bristol Aeroplane Co., Ltd.

WITH EFFECT FROM JANUARY 6TH 1948

Students

ABERNETHY, WILLIAM. British Oxygen Co., Ltd.
 ASHBY, JOHN FREDERICK. British Railways.
 BESTER, PIETER ANDRIES. South African Railways.
 DOWNES, JOHN BERNARD. British Railways.
 FRIEND, JOHN HAROLD. Coventry Corporation Transport.
 HEDGECOX, RONALD. British Railways.
 HINE, CHARLES HENRY BERT. London Transport.
 HOLMES, FRED. Sunderland District Omnibus Co., Ltd.
 ISACKE, CHRISTOPHER GAINSFORD. British Overseas Airways.
 JENKINS, THOMAS HARRIS. British Railways.
 JONES, CYRIL ARTHUR. British Railways.
 KHAN, MOHAMMED NASERUDEEN. H.E.H. The Nizam's State Railway.
 LEE, THOMAS FREDERICK. London Transport.
 LEIGH, HENRY NORMAN. British Railways.
 LEONARD, KEITH WALTER GORDON. South African Railways.
 MARTIN, JOHN NEVILLE. British Railways.
 MASON, ROBERT. British Railways.
 MEADOWS, WILLIAM. British Railways.
 MORRIS, TOM. Tom Morris & Sons.
 MURDOCH, PETER. British Railways.
 PARKER, FRANK. Doncaster Corporation Transport.
 PAYNE, ERIC VICTOR. Rowntree & Co., Ltd.
 PEARCE, JOHN MICHAEL. Post Office.
 PRATT, NOEL WILDERS. Donaldson Wright, Ltd.
 PROCTOR, RAYMOND. Ribble Motor Services, Ltd.
 SPARKES, RONALD GEORGE. British Railways.
 SWALLOW, JOSEPH STANLEY. Blackpool Corporation Transport.
 WALL, STANLEY MAXWELL. British Railways.

WITH EFFECT FROM JANUARY 13TH 1948

Students

BAMBURY, RONALD PERCY WILLIAM. Leicester City Transport.

COOPER, EVAN GEORGE. Dunedin Corporation Transport.
 COTTAM, THOMAS VICTOR. Port of London Authority.
 DAYKIN, PETER DEREK. Nottingham City Transport.
 FAULKNER, WALTER RICHARD. British Railways.
 FELL, PERCY NORMAN. Nottingham City Transport.
 FILTNESS, WALTER EDWIN GEORGE. British Railways.
 GEBHARDT, DENNIS STANLEY. South African Railways.
 GRISENTHWAITE, DAVID ALAN.
 GROVER, JOHN WILLIAM. British Railways.
 HALL, ERNEST. Sheffield Corporation Transport.
 HARDY, FRANK HENRY. British Railways.
 HUMPHREY, ROBIN PRESTON. Southdown Motor Services, Ltd.
 MACE, PETER. British Overseas Airways.
 OATES, JAMES. H. Matthews & Sons (Transport), Ltd.
 SEWARD, JAMES WILLIAM. Lever Bros. & Unilever, Ltd.
 THOMAS, GEORGE HOUQUEZ. John Morgan & Sons.
 WELCH, ANDREW GERALD. British Railways.
 WILLBOND, GEORGE EDWARD. British Waterways.
 WILLIAMSON, JOHN. British Railways.
 WRIGHT, JACK. British Railways.

WITH EFFECT FROM JANUARY 19TH 1948

Members

BRITTON, REGINALD ERNEST. Haulage Contractor.
 JOYCE, CECIL. Chairman & Managing Director, Eric Barnard, Ltd.
 HILL, Sir REGINALD HERBERT, K.B.E., C.B., Chairman, Docks & Inland Waterways Executive, British Transport Commission.
 WALTER, Brigadier ARTHUR EDWARD MERVYN, C.B.E., Director, International Inland Transport Section, Ministry of Transport.

Associate Members

BRENNAN, JOHN HENTHORN CANTRELL. British Railways.
 CARPENTER, LEONARD ERNEST. British Railways.
 EDWARDS, ROY HARTLEY. Divisional Docks Engineer (South Wales), Western Region, British Railways.
 WOOD, HARRY. British Railways.

Associates

FINNIS, JAMES WILLIAM. Manager, Tank Haulage Dept., Pickfords, Ltd.
 GARDNER, GEORGE PERCY. Assistant Transport Manager, Thos. W. Ward, Ltd.
 HAWKINS, LEONARD ARTHUR WYON. Assistant Chief Accountant, Rhodesia Railways.
 MACK, STANLEY WALTER. Managing Director, West Midland Roadways, Ltd.

Graduates

BRANGWIN, RONALD WILLIAM. British Overseas Airways.
 FERNANDO, ISIDORE SABINARE. Ceylon Government Railway.
 MOVERLEY, ERNEST. Buenos Aires Great Southern Railway.
 SERPANCHY, ALOYSIUS GORDON LAWRENCE. Ceylon Government Railway.

WITH EFFECT FROM FEBRUARY 16TH 1948

Members

HARDING, FRANK DRYDEN MORLE, O.B.E. General Manager, Pullman Car Co., Ltd.
 SLIM, General Sir WILLIAM JOSEPH, G.B.E., K.C.B., D.S.O., M.C. Member, Railway Executive, British Transport Commission.

Associate Members

DAVIS, REGINALD PAGE. District Goods Manager (Newport, Mon.), Western Region, British Railways.
 KIERNAN, BERT COSTIN. Managing Director, James Kiernan, Ltd.
 LUDGATE, HAROLD CHARLES WILSON. General Manager, Swindon Corporation Transport.
 MORROGH, Brigadier WALTER FRANCIS, D.S.O., M.C. Principal Vehicle Officer, Ministry of Supply.
 SUGDEN, JOHN HARTLEY VICTOR. British Railways.

Associates

BAMFORD, THOMAS. Deputy General Manager, Barrow-in-Furness Corporation Transport.
 BUSH, GEORGE WILLIAM RANDOLPH. Works Manager, Thatcham Road Transport Services, Ltd.
 WAKELING, GEORGE ROGER. Manager (Portsmouth), Southdown Motor Services, Ltd.

Graduates

CLARKE, IAN BERTRAM. Joseph Sankey & Sons, Ltd.
 GEE, WILLIAM. South African Railways.
 RYAN, DENIS MERVYN. Metropolitan Railcars (Ganz Patents), Ltd.

BERKS., BUCKS. AND OXON. AREA

A meeting of members of the Institute of Transport in this area was held on Monday, November 17th at the Town Hall, Reading, having been convened by Mr. W. J. Evans, M.Inst.T., the General Manager of the Reading Corporation Transport. The meeting was well supported and the members present were first entertained at tea by the Mayor (Alderman H. V. Kersley, J.P.).

The Mayor of Reading extended a very warm welcome to the members and promised his support for any developments which might take place. As a former Chairman of the Transport Committee of the Reading Corporation he had a very special interest in transport.

Sir Lynden Macassey, K.B.E., K.C., who was President of the Institute 1924-25, then gave an address on "Transport and the Community".

After Sir Lynden's address, a Resolution was carried expressing approval for the formation of a branch of the Metropolitan Section of the Institute for the members in the area and a Committee was appointed to consider the steps which should be taken and to convene a further meeting. Mr. W. J. Evans was appointed Chairman of the Committee, and Mr. Walter Kershaw was appointed Hon. Secretary.

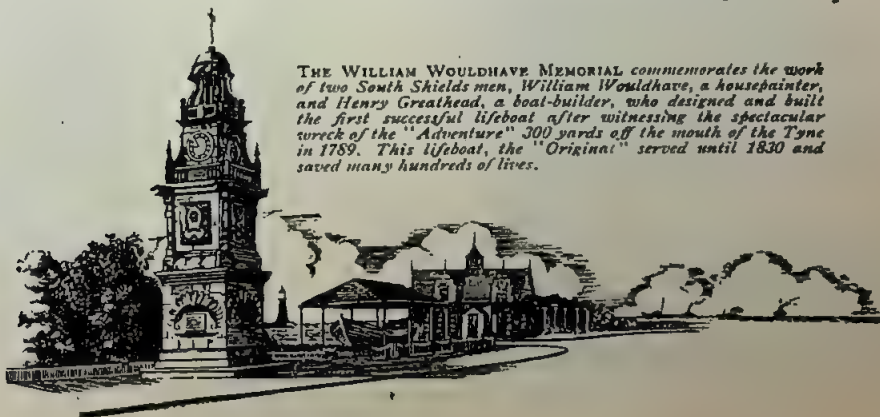
Around Britain with N.C.B.



Best known perhaps as a seaport, South Shields nevertheless has a good share of heavy industry on Tyneside. Shipyards, coalmines, and foundries make big contributions to her prosperity and furthermore, the town is now benefitting from the development of light industries in the North East. To serve a growing population of more than 100,000, the South Shields Corporation Transport Department operates an electric route of 14½ miles and has now completed the changeover from trams to trolleybuses. Featured prominently in the South Shields fleet are several vehicles supplied by Northern Coachbuilders Ltd. These are high-bridge type rear-entrance 56 seater trolleybuses of standard N.C.B. design and of composite construction. Like South Shields, other leading operators are discovering that there is a standard N.C.B. design for every P.S.V. requirement. May we give you further details?

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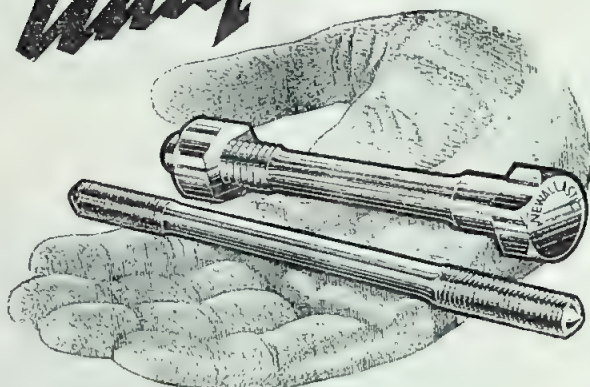
Claremont Road, Newcastle upon Tyne, 2.



THE WILLIAM WOULDHAVE MEMORIAL commemorates the work of two South Shields men, William Wouldhave, a housepainter, and Henry Greathead, a boat-builder, who designed and built the first successful lifeboat after witnessing the spectacular wreck of the "Adventure" 300 yards off the mouth of the Tyne in 1789. This lifeboat, the "Original" served until 1830 and saved many hundreds of lives.

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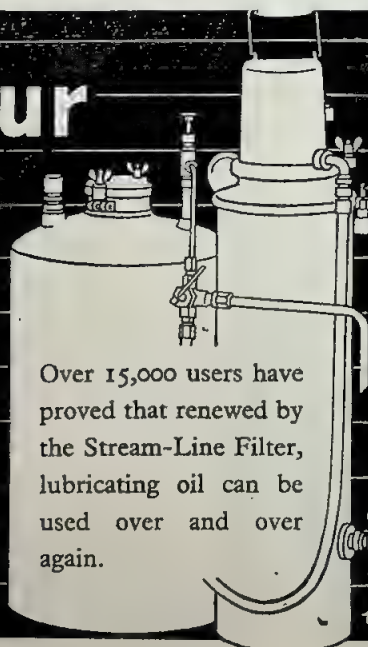
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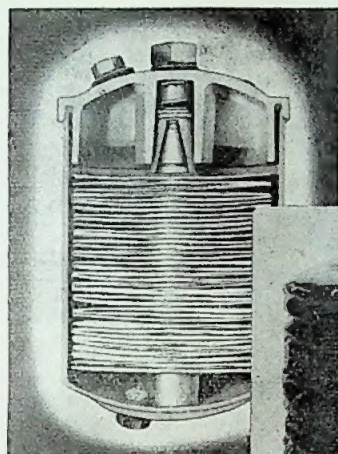
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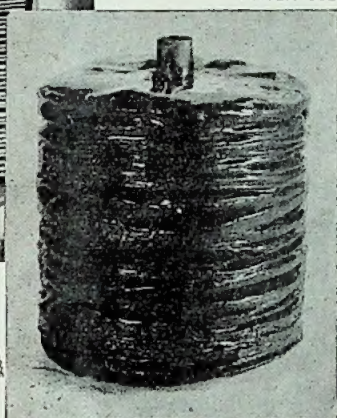


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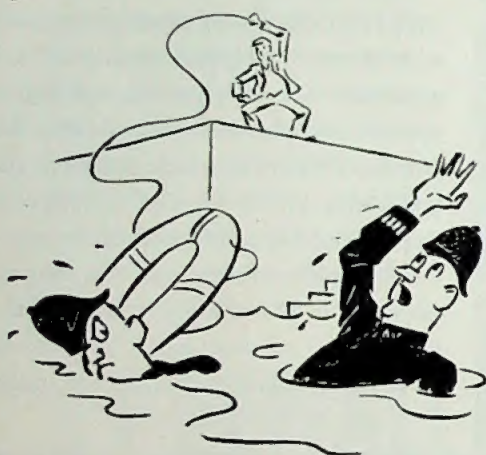
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